# A STUDY OF THE EXTENT TO WHICH THE INSTRUCTIONAL PRACTICES OF TEACHERS OF ADULTS DIFFER FROM THE INSTRUCTIONAL PREFERENCES OF ADULT LEARNERS ENROLLED IN POSTSECONDARY CREDIT COURSES

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by Nancy L. Wilson

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The problem. Most adult education literature supports the collaborative teaching-learning mode as the most effective method when teaching adults. While this andragogical model is accepted by most adult educators, little research has been conducted that investigates the instructional practices of teachers of adults and the instructional preferences of adult learners, and that measures the extent to which the instructional practices of teachers of adults differ from the instructional preferences of adult learners.

Procedures. The design of the study used a self-reported survey method to elicit responses from 40 adjunct instructors teaching at four extended campus locations of a private postsecondary institution and 341 adult learners enrolled in baccalaureate degree programs at the same institution.

The Principles of Adult Learning Scale (PALS) developed by Conti (1978) was used to determine the collaborative or noncollaborative instructional practices of teachers of adults. An adapted form of the PALS instrument, the Student Preferences of the Principles of Adult Learning Scale (SPPALS) was used to measure if the instructional preferences of adult learners were either collaborative or noncollaborative.

Findings. The instructional practices of teachers of adults and the instructional preferences of adult learners were found to be similar and both exhibited a noncollaborative orientation. No significant difference was found between the scores of the teachers of adults and the scores of the adult learners. Of the five instructor variables investigated (gender, age, career background, amount of teaching experience, type of course facilitated), none were significant and of the four student variables (gender, length of attendance, academic major, types of course enrolled), three were found to be significant. Female students preferred instructional practices that were collaborative to a greater extent than male students, students majoring in education and social science preferred instructional practices that were collaborative to a greater

extent than business majors, and students enrolled in qualitative courses preferred instructional practices that were collaborative to a greater extent than students in quantitative courses.

Conclusions. The study suggests that in a postsecondary setting, the instructional orientations of teachers and adult learners have a noncollaborative orientation. Furthermore, adult students seemingly prefer different teaching methods depending on their field of study and the type of course in which they are enrolled. Gender differences also influence student instructional preferences. The study questions whether the collaborative teaching-learning mode can be generalized to the extent that in all settings and in all situations it is the most effective method when teaching adults. Continued research examining situational aspects of adult learner instructional preferences would seem warranted as would research expanding the sample to include full-time faculty and traditional students.

Table of Contents


| | Page |
|---|---|
| List of Tables | iv |
| Chapter | |
| 1. INTRODUCTION | 1 |
| Background | 1 |
| Statement of the Problem | 7 |
| Purpose of the Study | 8 |
| Generalized Research Questions | 8 |
| Significance of the Study | 9 |
| Definition of Terms | 10 |
| Limitations of the Study | 16 |
| 2. REVIEW OF THE LITERATURE | 17 |
| Introduction | 17 |
| Theoretical Framework | 17 |
| Elements of the Collaborative Teaching Mode | 21 |
| Synthesis of Existing Studies | 30 |
| 3. METHODOLOGY | 47 |
| Description of the Population to be Studied | 48 |
| Research Questions | 49 |
| Primary Hypotheses | 51 |
| Instrumentation | 53 |
| Research Design | 61 |
| Data Collection Protocol | 62 |
| Data Analysis | 64 |

Page

4. ANALYSIS OF THE DATA ..... 66

Summary of Study ..... 66

Descriptive Analysis ..... 66

Demographic Data, Frequency, and Percentage Distributions ..... 67

Summary of Demographic Data, Frequency and Percentage Distributions ..... 71

Analysis of Statistical Data ..... 71

Descriptive and Inferential Statistical Findings ..... 72

Summary of Descriptive and Inferential Statistics ..... 106

5. SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS ..... 110

Introduction ..... 110

Summary of Findings ..... 112

Discussion ..... 119

Conclusions ..... 127

Recommendations ..... 129

REFERENCES ..... 130

APPENDIXES

A. Principals of Adult Learning Scale (PALS) and Forms ..... 140

B. Student Preferences of Principles of the Adult Learning Scale (SPPALS) and Forms ..... 146

C. Instrument Items Categorized for Factors .... 152

D. Instructor Information Form ..... 157

Page

E. Student Information Form ..... 158

F. Memo to Instructors ..... 159

G. Correlation Table ..... 160

# List of Tables


| Table | | Page |
|---|---|---|
| 1. | Principles of Adult Learning Scale Comparative Scores | 33 |
| 2. | Studies Used to Determine the Generalizability of PALS | 35 |
| 3. | Additional Studies Using the PALS Instrument in Various Settings | 36 |
| 4. | College and University Studies Using the PALS Instrument | 41 |
| 5. | Scoring Range and Listing of Items in Each Factor | 61 |
| 6. | Instruments Used and Sample of Instructors and Students | 68 |
| 7. | Instructor Demographic Data, Frequency and Percentage Distributions | 69 |
| 8. | Nontraditional Student Demographic Data, Frequency and Percentage Distributions | 70 |
| 9. | Statistics of Instructors and Nontraditional Students | 74 |
| 10. | Instructors and Hypothesized Population Mean of PALS | 78 |
| 11. | Nontraditional Students and Hypothesized Population Mean of PALS | 81 |
| 12. | Statistics of Instructors by Gender | 83 |
| 13. | Statistics of Instructors by Age | 85 |
| 14. | Statistics of Instructors by Career Background | 87 |
| 15. | Statistics of Instructors by Number of Courses Taught | 89 |
| 16. | Statistics of Instructors by Type of Course Currently Being Taught | 91 |

Page

17. Statistics of Nontraditional Students by Gender ..... 94

18. Statistics of Nontraditional Students by Length of Attendance ..... 97

19. Statistics of Nontraditional Students by Majors ..... 99

20. Analysis of Variance among Business, Social Science, and Education Majors ..... 101

21. Descriptive Statistics of Nontraditional Students by Type of Course Currently Enrolled ..... 105

22. Summary of Significant Findings ..... 109

# Chapter 1

# INTRODUCTION

## Background

Research on adult development and learning is a fairly recent phenomenon. "Before the middle of the twentieth century, there was no systematic set of information that covered even half of an individual's lifetime, and there were no theories or models of psychological development that focused on this part of the life cycle" (Santrock, 1985, p. 10).

As the adult life span increased and adults returned to the classroom, studies began to emerge on adult development (Gould, 1978; Havighurst, 1973; Knox, 1977; Levison, 1978; Loevinger, 1976; Sheehy, 1976), adult participation in learning activities (Aslanian & Brickell, 1980; Johnstone & Rivera, 1965; National Institute of Adult Education, 1970), motivational factors of adult learning (Boshier, 1973; Cross, 1981; Darkenwald & Merriam, 1982; Houle, 1961; Merriam & Caffarella, 1991; Morstain & Smart, 1977), and adult learning characteristics (Brookfield, 1983; Kidd, 1959; Knowles, 1970; Knox, 1977; Lindeman, 1926; Thorndike & others, 1928; Tough, 1973). Merriam and Caffarella (1991) state that "the field has developed a significant knowledge

base about learning in adulthood, much of it of fairly recent origin" (p. 316).

"A number of researchers and practitioners have sought to synthesize the findings of this body of research into some framework of adult learning principles" (Brookfield, 1986, pp. 33-34). Previously, only one model of assumptions about learning and learner characteristics existed (Knowles, 1979, p. 52). This model was called pedagogy or conventional education and was based on the transmittal of knowledge and skills. Pedagogical assumptions were confined to the responses and reactions of children to teaching. After World War II, when adults entered the classroom in significant numbers, educators began experiencing problems with the pedagogical model when teaching adults.

> Accordingly, their teachers found them to be resistant frequently to the strategies that pedagogy prescribed, including fact-laden lectures, assigned readings, drill, quizzes, rote memorizing, and examinations. Adults appeared to want something more than this, and drop-out rates were high. (Knowles, 1980, p. 40)

Eduard Lindeman was the first theorist to define adult learning characteristics and suggested in 1926 that adult educators begin experimenting with different teaching methods when teaching adults. Lindeman's (1926) theory was based on the belief that "education is not preparation for life but education is life" (p. 4). Lindeman stated that the purpose of education is to put meaning into life itself; that adult education should be via the route of situations,

not subjects; and that the resource of highest value in adult education is the learner's experience (pp. 5-6). "In conventional education the student is required to adjust himself to an established curriculum; in adult education the curriculum is built around the student's needs and interests" (p. 6).

In 1970 Malcom Knowles described four andragogical assumptions which distinguished adult learning from childhood learning.

> These assumptions are that as a person matures: 1) his self-concept moves from one of being a dependent personality toward one of being a self-directed human being; 2) he accumulates a growing reservoir of experience that becomes an increasing resource for learning; 3) his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles; and 4) his time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, his orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness. (Knowles, 1970, p. 39)

In contrast to the andragogical assumptions,

> the pedagogical model assigns to the teacher full responsibility for making all decisions about what will be learned, how it will be learned, when it will be learned, and if it has been learned. It is teacher-directed education, leaving to the learner only the submissive role of following a teacher's instructions. (Knowles, 1984, pp. 52-53)

The instructional climate is "authority-oriented, formal, and competitive" (Davenport & Davenport, 1985, p. 6). Information is transmitted from the instructor to the students in traditional formats such as lectures, assigned readings, and audio visual presentations.

The writings of Bergevin (1967), Houle (1972), Freire (1973), Kidd (1973), and others exhibit many commonalties in the basic assumptions of adult learning. Collectively they agree that the learner should participate in needs diagnosis, goals formation, and outcomes evaluation. They describe the instructor of adults as a facilitator rather than a repository of facts.

Houle (1972) states that some believe that "education is fundamentally the same wherever and whenever it occurs and the basic design of learning is identical whenever or wherever it occurs" (p. xx). Elias (1979) and others challenged Knowles' contention and said that "there is no sound distinction between andragogy and pedagogy. . . . Teaching adults is essentially the same as teaching children" (p. 252). This debate prompted Knowles (1980) to clarify and develop his definition of andragogy. He revised his andragogical theory, stating that it was "another model of assumptions about learners to be used alongside the pedagogical model of assumptions, thereby providing two alternative models for testing out the assumptions as to their 'fit' with particular situations" (p. 43). Instead of andragogy defined in contrast to pedagogy, Knowles viewed the models as two ends of a spectrum.

Brookfield (1986) concurs with Knowles that andragogy is "a set of assumptions concerning adult learning processes from which we can derive a number of injunctions concerning

appropriate teaching methods" (p. 120). He adds that "the notion of collaboration between participants in an adult learning group, along with the idea that teaching-learning is a transactional encounter, seem to be at the core of the (andragogical) concept" (p. 120).

Conti (1985a) suggested that while there are various modes of instruction, "a significantly large portion of the adult education literature supports the collaborative mode as the most effective and appropriate style for teaching adults" (p. 7). In the collaborative teaching-learning mode, adult education is learner-centered, the role of experience is emphasized, adults are self-directed, adults are actively involved in their education, their interests are problem-centered, and the role of the teacher is to function as a facilitator (Conti, 1983, p. 63).

Knowles maintains that "the behavior of the teacher probably influences the character of the learning climate more than any other single factor" (p. 47). This teaching style or instructional practice is a "range of behaviors in which the teacher can operate comfortably according to a certain value system" (Conti, 1989, p. 4). Conti (1989) indicates that there are two fundamental teaching styles: "a responsive, collaborative, learner-centered mode and a controlling, teacher-centered mode" (p. 5). In the collaborative teaching-learning mode, the teacher and learner have an interactive role in the educational process.

The teacher's task is to create an environment that facilitates learning which employs students to take responsibility for their own learning (Bergevin & McKinley, 1965, p. 9).

In 1978 Conti developed the Principles of Adult Learning Scale (PALS) to measure the extent to which adult educators practice the collaborative teaching-learning mode. Conti based his instrument on the adult learning principles and categorized them into seven instructional elements or factors: (a) Learner-centered Activities, (b) Personalizing Instruction, (c) Relating to Experience, (d) Assessing Student Needs, (e) Climate Building, (f) Participation in the Learning Process, and (g) Flexibility for Personal Development. A high score on the PALS instrument indicated usage of the collaborative teaching style. A low score indicated a teacher-centered or noncollaborative instructional teaching practices (Conti, 1983, p. 65). To date several research studies have used the PALS instrument to determine the extent to which adult educators practice the collaborative teaching-learning mode.

As Conti (1984) investigated adult educators' instructional practices he found that, although contrary to adult education literature, in certain situations student achievement was greater in a teacher-centered environment (p. 47). He then suggested (1984) that "studies should focus on the unique parts of a field instead of the field as

a whole" (p. 47). Since then studies utilizing the PALS instrument in various settings such as adult education non-credit programs, health fields, business and industry, and college and university credit programs were conducted to measure the extent to which teachers of adults practice the collaborative teaching-learning mode.

## Statement of the Problem

In 1989 Conti reaffirmed his contention that the major tenets of adult learning "are general in nature and do not take into consideration the unique situations in which many adult educators find themselves" (p. 6). Instructional practices of teachers of adults have been investigated in various settings, but little research has been conducted on situational aspects of the collaborative teaching-learning mode and the differences or similarities between the teacher practices and student preferences. For example, do instructors' teaching practices differ with the instructors' gender, age, career background, amount of teaching experience, or type of course facilitated? Likewise, do instructional preferences of adult learners differ by gender, length of attendance, academic major, or type of course enrolled? More importantly, is there an overall difference between the instructional practices of teachers of adults and the instructional preferences of adult learners?

## Purpose of the Study

The purpose of this study was to investigate the instructional practices of teachers of adults and the instructional preferences of adult learners, and to measure the extent to which the instructional practices of teachers of adults are similar or different from the instructional preferences of adult learners.

## Generalized Research Questions

The following is a summary of the research questions that guided this study. A detailed description of the research questions and hypotheses are found in Chapter 3.

Is there a difference between the instructional practices of teachers of adults and the instructional preferences of adult learners?

Is there a difference between the instructors of this study and the hypothesized population mean of the PALS instrument? Is there a difference between the adult learners of this study and the hypothesized population mean of the PALS instrument?

Is there a difference between the instructional practices of teachers of adults in any of the five variables: (a) gender, (b) age, (c) career background, (d) amount of teaching experience, and (e) type of course facilitated?

Is there a difference between the instructional preferences of adult learners in any of the four variables: (a) gender, (b) length of attendance, (c) academic major, and (d) type of course enrolled?

The PALS instrument was used to measure the extent to which teachers of adults practice the collaborative or noncollaborative mode of instruction. An adapted form of the PALS instrument, Student Preferences of the Principles of Adult Learning Scale, SPPALS, was used to measure the preferences of the adult learners.

## Significance of the Study

Nearly 50% of the college student population will be adults by the turn of the century (NCES, 1992). The principles of adult learning suggest that "adults thrive on collaborative learning" (McDaniel, 1987, p. 102). The literature supports the collaborative teaching-learning mode as the most effective method for teaching adults, but it "does not delineate the degree to which this collaborativeness is appropriate for each part of this diverse field" of adult education (Conti, 1989, p. 23). By investigating the instructional practices of teacher of adults and the instructional preferences of the adult learner and by examining the similarity or difference between teachers and learners in the college setting, the

knowledge base of adult education and the implication for practice will be expanded.

## Definition of Terms

Accelerated course format is a time schedule of instruction where postsecondary semester credit course work is taught within an 8-week period instead of the usual semester length. The contact hours or seat time of the eight-week course are equivalent to the semester course in that the class periods are longer during the eight-week period.

Adjunct faculty persons are instructors who are hired on a part-time basis in postsecondary institutions.

Adult is a person who is responsible for his or her own life and is performing a social role such as worker, spouse, or parent (Knowles, 1970, p. 24).

Adult learner "is any individual who engages in educational activities for the purposes of acquiring knowledge, skills, or values in any area. The term student is generally avoided since it connotes a younger learner, but when used, it is equivalent to (adult) learner" (Cranton, 1989, p. 4). The adult learner is used interchangeably with the term nontraditional student.

Characteristics of the adult learner are those components, attributes, or features that typically describe adults as learners, such as physical needs when learning, cognitive differences as compared to youth, self-concept, need to know, role of experience, readiness to learn, orientation to learning, and motivation for learning.

Collaborative teaching-learning mode or style is "a learner-centered method of instruction in which authority for curriculum formation is shared by the learner and the practitioner" (Conti, 1978, p. 11).

Educator career background is used to define instructors who are involved in teaching as a career whether it be in the K-12 system, vocational training areas, community college, college, or university programs.

Experienced instructors for this study are instructors who have taught three or more college credit courses in a classroom where most of the students are adults.

Factors are the seven elements used in the Principles of Adult Learning Scale that relate to the instructor's teaching style. The PALS instrument of 44 items is divided into the following factors or categories: 12 items on learner-centered activities, 9 items on personalizing instruction, 6 items on relating to experience, 4 items on assessing student needs, 4 items on climate building, 4

items on participation in the learning process, and 5 items on flexibility for personal development.

Full-time student is described in this study as a student taking two three-semester credit hour courses during the eight-week term.

Instructional practices is the actual behavior that an instructor demonstrates in the classroom which reflects his/her ideas, values, beliefs, and attitudes through the teaching-learning process (Freeland, 1988). It is used interchangeably with teaching style.

Instructional strategies are techniques used in a classroom to accomplish the task of delivering instruction.

Instructor and/or teacher is used interchangeably with faculty who facilitate or direct learning in college credit courses.

Learner-centered approach is instruction that encourages "the learner to seek the maximum amount of trust, self-direction and responsibility" (Conti, 1978, p. 9) in the learning experience.

Learning style is the manner in which a person perceives and processes information in a learning situation (Rezler & Rezmovic, 1981).

Majors are specific areas of course work that students emphasize during their college curriculum. For this study, students' majors are divided into business, social science, and education areas.

Noncollaborative teaching-learning mode or style is a teacher-centered approach where authority resides with the instructor who views himself/herself as a provider of knowledge rather than a facilitator. It is used interchangeably with pedagogical model of learning and teacher-centered instruction (Conti, 1985a, p. 10).

Nontraditional student is used interchangeably with the adult learner and describes an undergraduate student who is 25 years or older. The National Center for Education Statistics uses this age delineation when accumulating data on the nontraditional student.

Novice instructors for this study are instructors who have taught not more than two college credit courses in a classroom where most of the students are adults.

Part-time student in this study is described as a student taking one three-semester-credit-hour course during the eight-week term.

Pedagogical model of learning "is teacher-directed education, leaving to the learner only the submissive role of following a teacher's instructions" (Knowles, 1973, p. 52).

Postsecondary college credit programs are institutions providing courses leading to a four-year degree.

Practitioner career background is used to define instructors who have a career outside of the teaching profession.

Principles of adult learning is a fundamental concept upon which theory, practice, and other concepts about adult learning are based (Conti, 1978).

Principles of Adult Learning Scale (PALS) is an instrument developed and validated by G. J. Conti which measures the degree of practitioner support and adherence to the collaborative teaching-learning mode (Conti, 1978).

Qualitative course in this study is a college course that does not have an emphasis on mathematical methods.

Quantitative course in this study is a college course that has an emphasis on mathematical methods.

Social environment of the classroom is "the psychosocial climate or 'personality' of a classroom" (Beer & Darkenwald, 1989, p. 33).

Student Preferences of the Principles of Adult Learning Scale (SPPALS) is a modification of the Principles of Adult Learning Scale (PALS) instrument. To accommodate the students' responses, the words "I prefer instructors who" were inserted before each item on the PALS.

Teacher-centered approach is instruction that is managed by the teacher and is a more authoritarian style of teaching.

Teaching-learning mode or method is used interchangeably with teaching strategies.

Teaching strategies are techniques used in a classroom to accomplish the task of delivering instruction.

Teaching style is "a range of behaviors in which the teacher can operate comfortably according to a certain value system" (Conti, 1989, p. 4). It is used interchangeably with instructional practices.

Term is one of the six eight-week sessions of the institution's academic year.

Traditional student refers to an undergraduate student between the ages of 18 to 24 years. This age delineation for the traditional student is used by the National Center for Education Statistics.

## Limitations of the Study

Adjunct faculty and nontraditional students attending four extended campuses of one postsecondary institution in Iowa were surveyed. Therefore, the study cannot be generalized to include full-time faculty or those students enrolled on traditional residential campuses.

To record the response of the adult learners' preferences, the phrase "I prefer instructors who" was added to each item of the PALS instrument. Adapted forms of PALS were used in previous studies (Brooks, 1988; Clow, 1986; Lucas, 1987) to measure student preferences of instructional behaviors. Conti, the author of PALS, suggested that adaptations such as this do not affect the integrity of the instrument since the only change was personal reference. However, the adaptation must be considered in the validity of the SPPALS instrument.

# Chapter 2

# REVIEW OF THE LITERATURE

## Introduction

The purpose of this study was to investigate the instructional practices of teachers of adults and the instructional preferences of adult learners, and to measure the extent to which the instructional practices of teachers of adults are similar or different from the instructional preferences of adult learners. This chapter will review the literature in the following areas; (a) theoretical framework guiding this study, (b) elements of collaborative teaching-learning mode, and (c) synthesis of existing studies measuring the extent of usage of the principles of adult learning.

## Theoretical Framework Guiding the Study

Over the past two decades, the number of adults enrolled in higher education has increased dramatically. In 1987 the National Center for Education Statistics (NCES) reported that the number of older students has grown more rapidly than the number of younger students. "Between 1970 and 1985, the enrollment of students under age 25 increased by 15 percent. During this same period, enrollment of persons age 25 and over rose 114 percent" (p. 116).

A study in 1988 by Aslanian and Brickell found that adults constitute 45% of all college credit enrollment in the United States and that "the adult share, which has grown continuously since 1970, will continue to grow" (p. 11). NCES predicts that during the 1990s over 50% of college enrollment will be adults (NCES, 1992, p. 163).

According to Cross (1981) the demographic change on our nation's college campuses can be attributed to "1) larger numbers of adults in the population . . . 2) social change such as the rising educational level of the populace, the changing roles of women, early retirement, civil rights, increased leisure time, changing life styles . . . 3) the technological change and the knowledge explosion" (pp. 2-3). "For the first time in our society adults outnumber youth" (Merriam & Caffarella, 1991, p. 6).

With the increase in the number of adults returning to the classroom, a transformation has occurred in the way education is delivered to adults.

> Those who will be on the receiving end of instruction must be considered from the beginning of the instructional planning process since the educational background, intellectual characteristics, and affective characteristics of the audience will greatly affect how much and how well learning will occur. (Cranton, 1989, p. 14)

Various aspects of adult development and learning have been investigated by researchers which led to a set of principles now thought of as teaching methods for guiding the learning process of adults. These principles are based

on the needs, interests, and expectations of the adult learner. It is believed that by using these principles, an instructor can create a social environment in the classroom where adult learning is enhanced. "Recent research on teaching style indicates that the things that teachers do in the classroom make a difference in how their students learn" (Conti, 1989, p. 15).

Two researchers, Lindeman and Knowles, have advanced the understanding of the teaching-learning process. In 1926 Lindeman, a pioneering theorist of adult learning, presented the assumption that adult learning was different from the pedagogical model of learning. Strongly influenced by the educational philosophy of John Dewey, he was the first to lay the foundation for a systematic theory of adult learning by identifying adult learner characteristics that are different from the pedagogical model of learning.

Knowles (1984) summarized Lindeman's assumptions as:

> 1) adults are motivated to learn as they experience needs and interests that learning will satisfy; these are, therefore, the appropriate starting points for organizing adult learning activities, 2) adults' orientation to learning is life-centered; therefore, the appropriate units for organizing adult learning are life situations, not subjects, 3) experience is the richest resource for adults' learning; therefore, the core methodology of adult education is the analysis of experience, 4) adults have a deep need to be self-directing; therefore the role of the teacher is to engage in a process of mutual inquiry with them rather than to transmit his or her knowledge to them and then evaluate their conformity to it, and 5) individual differences among people increase with age; therefore, adult education must make optimal provision for

> differences in style, time, place, and pace of learning. (p. 31)

Lindeman's beliefs about the characteristics of adult learners have been supported and enriched by adult educators ever since. Attempts had been made as early as 1949 to bring together research regarding the adult learner, but it was not until the mid-60s, when European adult educators felt the need for a label to describe a theoretical model of learning that differed from the pedagogical model of teaching children, that they coined the word "andragogy." Andragogy was derived from the stem of the Greek word "aner' meaning man, as distinguished from boy, and "agous" meaning leader. The word literally means the art and science of teaching adults.

> Although the (andragogy) concept was first used in 1883 by Alexander Kapp, a German, and was introduced in the United States by Lindeman in the 1920's, it was popularized by Knowles who originally defined andragogy as the art and science of helping adults learn. (Beder & Carrea, 1988, p. 75)

Knowles (1970) distinguished between andragogy and pedagogy with four assumptions about the characteristics of adult learners. Adult learning is different in the following ways: the concept of the learner is more self-directed, the role of the learner's experience is a rich resource for learning, the readiness to learn is closely related to the developmental tasks of his/her social role, and the orientation to learning is more problem-centered than subject-centered.

The andragogical model that Knowles and others (Bergevin, 1967; Freire, 1973; Houle, 1972; and Kidd, 1973) have advanced is based on how adults learn and their preferred teaching methods. The adult's learning process is unique in that

> the adult's mental learning state is not a blank chalkboard on which you, the teacher, can write as you wish. Neither is the adult learner's head an empty pail for you to fill with your knowledge and ideas. The adult learner's chalkboard already has many messages on it, and his mental pail is almost full already. (Draves, 1984, p. 7)

"An instructor adhering to an andragogical philosophy would establish an institutional climate that was mutually respectful, informal, and collaborative" (Davenport & Davenport, 1984, p. 131).

## Elements of the Collaborative Teaching-Learning Mode

Support for the underlying principles of the collaborative teaching-learning mode can be found in the writings of prominent adult educators such as Lindeman, Knowles, Bergevin, Kidd, Houle, and Freire.

> Each argues that the curriculum should be learner-centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in the diagnosis of needs, the formation of goals, and the evaluation of outcomes, that adults are problem-centered, and that the teacher should serve as a facilitator rather than a repository of facts. While each of these educators mix the educational ingredients somewhat differently, all combined them in formulas that articulate a comprehensive philosophy supporting

> the collaborative mode. Their writings can therefore serve as a source of adult learning principles for the collaborative mode. (Conti, 1982, pp. 138-139)

Conti grouped their philosophy of the collaborative mode into areas of learner-centered curriculum, role of experience, self-directed learner, learner involvement, problem-centered approach, and instructor as facilitator.

Learner-centered Curriculum

In the collaborative teaching-learning mode, the instructional process is learner-centered. "In conventional education the student is required to adjust himself to an established curriculum; in adult education the curriculum is built around the student's needs and interests" (Lindeman, 1926, p. 6). Kidd (1973) agrees that the development of the curriculum begins by studying the needs and wants of the adult learner (p. 272).

Dewey (1938) contends that all adults have desires and "these desires are the ultimate moving springs of action" (p. 82) and "the intensity of the desire measures the strength of the efforts that will be put forth" (p. 83). Therefore, according to Dewey, the teacher should take advantage of the occasion and be "aware of the capacities, needs, and past experience of those under instruction" (p. 85). Adults are ready to learn when they have a need to cope effectively with their real-life situations. Knowles' (1980) readiness to learn assumption suggests that the

organizing principle of adult education should start with the developmental needs of the learner (p. 51).

"Programs of learning (in adult education) should be developed around the particular problems and needs of the participants" (Bergevin, 1967, p. 13). Consideration of the learner, their view of the world, and their perception level is the starting point "where the content of education springs" (Freire, 1973, p. 159). Houle (1972) believes that "the educator's methodological task is to devise, perfect, and use the techniques and instruments which reveal the apparent interests and the felt or ascribed needs of the individuals or groups he serves" (p. 7). In the collaborative mode of instruction, the learner and the practitioner share the responsibility for developing the curriculum (Conti, 1985a, p. 7).

Role of Experience

"The resource of highest value in adult education is the learner's experience" (Lindeman, 1926, p. 6). Having lived longer than children, adults have a rich accumulation of experiences which provide a foundation for new learning. The method of instruction in adult learning shifts from transmittal techniques to active involvement of sharing experiences and practical application (Knowles, 1980, p. 50).

Because adults bring numerous experiences to the learning situation, the teachers of adults must be aware of their implication in the classroom. "Experience can be advantageous or harmful in life in general and to the adult learning process in particular" (Bergevin, 1967, p. 121). The adult "may bring to his learning a background of knowledge, skill, and judgment which can enrich his learning and that of his classmates. He may also grow rigid, opinionated, or forgetful . . . and thereby present special problems to anyone who tries to teach him" (Houle, 1972, p. 107).

Experiences play an important role in adult learning. "Experience does not go on simply inside a person. It does go on there, for it influences the formation of attitudes of desire and purpose" (Dewey, 1938, pp. 33-34). Adults have more experiences, have different kinds of experiences, and their experiences are organized differently than the experiences of children (Kidd, 1973, p. 46). The learning experience for adults is not education of permanence or change in something. "The more they (adults) can review critically their past and present experiences in and with the world . . . the more they realize that the world is not an unalterable state which crushes them" (Freire, 1973, p. 155). In the collaborative teaching-learning mode, "learning activities are related to life experiences to help

students become more aware of significant events in their lives" (Conti, 1985a, p. 7).

Self-directed Learner

Adults "desire power over their environments" (Lindeman, 1926, p. 27). According to Knowles (1984), "adults have a self concept of being responsible for their own decisions, for their own lives. They resent and resist situations in which they feel others are imposing their wills on them" (p. 56). In adult education, the educator moves the adult from a dependent learner to a self-directed learner while "traditional education is one of imposition from above and from outside" (Dewey, 1938, p. 4). As a person matures, "there is a move toward greater independence and greater self-responsibility" in the learning process (Kidd, 1973, p. 43).

Because of the deep psychological need for adults to be seen as capable of self-direction, instructors of adults give learners many opportunities to collaborate in the learning process (Knowles, 1980, p.38).

> The proper exercise of freedom can make a learner feel that he counts for something, that he is important enough to make a contribution and be listened to. When the learner feels he is respected and taken in as a copartner in learning, he is more likely to improve his power of perception and to learn better. (Bergevin, 1967, p. 130)

Freire (1973) agrees that "if man looses his ability to make choices and is subjected to the choices of others, to

the extent that his decisions are no longer his own because they result from external prescriptions, he is no longer integrated (satisfied)" (p. 4). The collaborative teaching-learning mode encourages the students to take responsibility for their learning experiences (Conti, 1985a).

Learner Involvement

Participation is an important factor in adult learning (Lindeman, 1926, p. xvi). Dewey (1938) also emphasized the involvement of the learner in determining their learning needs, in developing goals, and in evaluating the outcomes of the learning experience (p. 77). In adult education the "teacher shares his or her thinking about options available in the designing of learning experiences and the selection of materials and methods and involves the learners in deciding among these options jointly" (Knowles, 1980, p. 57).

Houle (1972) contends that "the understanding and acceptance of educational objectives will usually be advanced if they are developed cooperatively" (p. 148). "Taking the learners' expectations into consideration at the program's inception will clarify and modify some of the vague hopes learners usually bring to a program" (Bergevin, 1967, p. 129). Kidd contends that when "the learner does take part in the development of the curriculum, this act

leads to a learning experience that is markedly different in quality" (p. 271).

Freire (1973) sees the purpose of the teacher as one who does not control the learning process but guides the learner into self-discovery. "Teaching cannot be done from the top down, but only from the inside out, by the illiterate himself, with the collaboration of the educator" (p. 48). The collaborative teaching-learning mode involves the "learner in the needs diagnosis, goals formation, and outcomes evaluation" (Conti, 1985a, p. 7).

Problem-centered Approach

According to Knowles (1984) an adult's orientation to learning is life-centered or problem-centered. "Adults are motivated to devote energy to learn something to the extent they perceive that it will help them perform tasks or deal with problems that they confront in their life situations" (p. 59). Learning presented in the context of application to real life-situations is the best teaching method when teaching adults (Lindeman, 1926, p. 115).

An adult's purpose for learning is often different from that of a child and is "motivated by a more pragmatic reason" (Bergevin, 1967, p. 123). Adult learning programs "must be fashioned to solve the peculiar problems at hand in

terms of the particular adults involved" (p. 125). Choosing a curriculum for adults means

> understanding the needs and interests of the learner, understanding the situation in which he lives, and the kinds of content that may serve his needs. It means a careful statement of objectives in a form that sets out the desired changes as well as the subject matter. It means selection of the precise learning experiences that may best accomplish these objectives. It assumes the fullest possible participation by the learner in curriculum building. (Kidd, 1973, p. 279)

The orientation to adult learning is problem-centered.

> The task of the educator is to present to the educatees as a problem the content which mediates them, and not to discourse on it, give it, extend it, or hand it over, as if it were a matter of something already done, constituted, completed, and finished. (Freire, 1973, p. 153)

In the adult years, "the impetus to study comes not from the established expectations of society but from his interaction with the conditions of his life" (Houle, 1972, p. 108). In the collaborative mode, "the curriculum is built around the particular problems and life situations of the learner rather than around a predetermined set of subjects for the classification of knowledge" (Conti, 1985a, p. 7).

## Instructor as Facilitator

In traditional education, "teachers are agents through which knowledge and skills are communicated and rules of conduct enforced" (Dewey, 1938, p. 3). In adult education, the teacher is facilitator of learning with the primary function "not to profess but to evoke--to draw out, not pour

in" (Lindeman, 1926, p. 119). The teacher, according to Kidd (1973), "must be a learner, must possess strong motives and positive attitude towards learning" (p. 296). Knowles (1980) suggests the critical function of the teacher is "to create a rich environment from which students can extract learning and then to guide their interaction with it so as to optimize their learning from it" (p. 56).

Freire (1973) sees the educator's role as "not the transmission of knowledge . . . it is not the act of depositing reports or facts in the educatee" (p. 149). "It is best understood as a complex of interacting elements, not as a sequence of events" (Houle, 1972, p. 39) but as an interaction between the teacher and learner. In the collaborative mode, the teacher functions as a facilitator of learning (Conti, 1985a, p. 7).

The collaborative mode has a curriculum that is learner-centered; uses learning episodes that capitalize on the learner's experience; considers the adult as self-directed; allows the learner to participate in needs diagnosis, goals formation, and outcomes evaluation; provides a problem-centered approach to learning; and views the teacher as a facilitator rather than a disseminator of knowledge (Conti, 1984, p. 44).

## Synthesis of Existing Studies

One of the early attempts to measure the principles of adult learning was in 1975 when Hadley developed the Education Orientation Questionnaire (EOQ). He operationalized the assumptions of underlying andragogy into six attitudinal dimension: (a) purpose of education, (b) nature of the learners, (c) characteristics of the learning experience, (d) management of the learning experience, (e) evaluation, and (f) relationships of the educator to and among learners.

Katz (1976), Kerwin (1979), Holmes (1980), Hopkins (1981), and Jones (1982) used Hadley's instrument to measure andragogical-pedagogical orientations of adult educators in a variety of settings. Realizing the necessity of studying the educator's instructional orientation along with the learner's orientation, Grubbs (1981), Christian (1982), Van Allen (1982), and Davenport & Davenport (1984) used Hadley's instrument or an adapted version such as Kerwin's Educational Description Questionnaire (EDQ), Grubbs' Student Educational Orientation Questionnaire (SEOQ), or Christian's Student Orientation Questionnaire (SOQ) to study student populations. These findings suggested that andragogical orientations can be defined, measured, and evaluated.

Studies using Hadley's instrument (EOQ) or an adaptation of this instrument, have been used in a variety

of settings. Van Allen (1982) surveyed community college faculty and found that young female instructors with high educational attainment and adult education training had a more andragogical orientation than did male instructors. Katz (1976) found that after instruction on how to teach adults, continuing education faculty moved toward a more andragogical teaching approach. Holmes (1980) investigated university faculty and found a significant difference between instructional orientation and interpersonal behaviors. Hopkins (1981) studied nurse educators and found that they were more pedagogically oriented. Kerwin (1979) studied faculty and students in a community college setting and found that students perceived andragogical instructors as providing more counseling and allowing more student involvement in the learning process.

The instructional preferences of students were also investigated. Grubbs (1981) found that younger, female students were more andragogically oriented as were married students (Van Allen, 1982). Davenport and Davenport (1984) found that males and females differ in their educational orientation, but their differences were not dramatic and that age and academic achievement had no correlation to a student's instructional orientation. No relationship was found between teaching style and academic gain (Jones, 1982) while another study found that student achievement and teaching styles were related (Conti, 1985b). Christian

(1982) found that students in mandatory classes were more andragogically inclined than students in voluntary type courses.

Since the development of Hadley's instrument, other instruments were constructed to measure the adult learning principles. Conti (1978) developed the Principles of Adult Learning Scale (PALS), Suanmali (1981) devised a 10-item inventory, James (1983) identified a 9-item survey, and Manley (1984) categorized clusters for measurement. These instruments were validated to assess the practice of adult learning. Other instruments such as Aspects of Instruction and Related Andragogical Principles (AIRAP) by Lam, and two instruments by Wilson (1991), Faculty Perceptions of Adult Learning (FPAL) and Adult Perceptions of Adult Learning (APAL) were developed to measure the adult learning principles but were not validated. Of these instruments, Conti's PALS was the only instrument which was used to any extent.

Conti's Principles of Adult Learning Scale (PALS) measured the extent to which adult educators practice the collaborative teaching-learning mode and be divided his instrument into seven factors. They are learner-centered activities, personalizing instruction, relating to experience, assessing student needs, climate building, participation in the learning process, and flexibility for personal development. For Conti, scores that were above the

mean of 146 were interpreted as representing the collaborative teaching-learning mode where the learner and teacher share responsibility in the learning process. Those scores falling below the mean were interpreted as representing the instructional practices of the noncollaborative mode in which authority resides with the instructor. The individual factor means were also interpreted in this manner (Conti, 1985a). See Table 1 for Conti's comparative scoring chart.

Table 1

Principles of Adult Learning Scale Comparative Scores

| Raw Score | T-Score | Percentile |
|---|---|---|
| 190 | 70 | 98 |
| 179 | 65 | 93 |
| 168 | 60 | 84 |
| 157 | 55 | 69 |
| 146 | 50 | 50 |
| 135 | 45 | 31 |
| 124 | 40 | 16 |
| 113 | 35 | 7 |
| 102 | 30 | 2 |

Note: The above scale was developed by Conti for comparing raw scores and standardized scores on the PALS (Conti, 1978, p. 214).

To establish construct validity, Conti submitted his instrument to a national jury of 10 prominent adult educators and to a local jury of practitioners for analysis to check on the collaborative theory underlying the instrument (Conti, 1978, pp. 50-51). Conti determined content validity or the extent to which the subject's responses on the instrument are representative of the total body of theory from which the items were based by field testing 57 Adult Basic Education (ABE) practitioners. Scores on the PALS were linked to the Flanders Interaction Analysis Categories (FIAC) which also measured initiating and responsive behaviors and produced a positive correlation (Conti, 1978, p. 52). Reliability was established through testing and retesting 23 ABE practitioners. The "study produced a reliable and valid instrument. It is rooted in the adult education learning principles of the established literature and is capable of identifying the degree to which practitioners support and adhere to the collaborative teaching-learning mode" (Conti, 1982, pp. 143-144).

Five studies were conducted within a few years of the development of the PALS instrument using ABE, hospital educators, and extension and training directors. See Table 2. In a follow-up study and factor analysis of 778 cases, Conti (1983) indicated that the descriptive statistics for PALS were stable. "The similarity between the mean and standard deviation scores for the total of all groups and

the original pilot group indicates that 146 is an accurate mean for PALS. This additional data suggests that the standard deviation should be 20" (Conti, p. 6).

Table 2

Studies Used to Determine the Generalizability of PALS (Conti, 1983, p. 65)

| Group | Size | Mean | SD |
|---|---|---|---|
| Original Sample (Conti-1978) | 57 | 145.60 | 22.14 |
| Hospital Educators (Douglass-1982) | 97 | 149.25 | 17.90 |
| Training Directors (Pearson-1980) | 99 | 148.76 | 22.30 |
| Cooperative Extension (Douglass-1982) | 107 | 146.30 | 18.46 |
| Texas Adult Educators (Douglass-1982) | 153 | 144.02 | 21.26 |
| Illinois ABE Teachers (Dinges-1980) | 265 | 145.14 | 19.96 |
| Total | 778 | 146.09 | 20.28 |

Additional studies used the PALS instrument to determine the extent to which adult educators practiced the collaborative teaching-learning mode. Studies found that a relationship existed between management style and teaching style (Franklin, 1988; Pearson, 1980). Instructors with more teaching experience (Franklin) and those with formal adult education course work (Douglass, 1982; Pearson, 1980) were more accepting of the collaborative mode. Instructional practices of graduate school faculty (Clancy, 1986) and those in certain health career fields (Deming,

1986) were more andragogically inclined. Welborn and Conti (1986) found teaching style and learning style influenced student academic gain and Wiley found that moral development is promoted through a collaborative teaching-learning mode. Results of other studies supported the noncollaborative orientation to instruction (Dinges, Freeland, Jones, Lucas, McKenzie, Sua, and Taylor).

Table 3

Additional Studies Using the PALS Instrument in Various Settings

| Year | Study (Type of Setting) | Size | Mean | SD | Instruction |
|---|---|---|---|---|---|
| 1988 | Franklin (YTheoryTrng Directors) | 124 | * | -- | collaborative |
| 1988 | Franklin (XTheoryTrng Directors) | | ** | -- | noncollaborative |
| 1990 | Taylor (Bus/Industry) | 163 | 124.46 | 16.30 | noncollaborative |
| 1986 | Deming (Hospital Educators) | 158 | 147.50 | 17.50 | collaborative |
| 1986 | Clancy (Field Social Work) | 239 | 156.70 | 14.00 | collaborative |
| 1987 | Lucas (Health Educators) | 96 | 137.00 | 17.00 | noncollaborative |
| 1987 | McKenzie (Health Nurses) | 150 | ** | -- | noncollaborative |
| 1988 | Freeland (Health Educators) | 203 | 140.09 | 18.08 | noncollaborative |
| 1986 | Wiley (Correctional Educators) | | *** | -- | |
| 1989 | Sua (Adult Educators) | 10 | 123.10 | 8.69 | noncollaborative |
| 1989 | Sua (Correctional Educators) | 8 | 123.25 | 17.15 | noncollaborative |
| 1984 | Jones (Secondary Teachers) | 39 | 108.40 | 15.02 | noncollaborative |
| Total | | 1190 | | | |

* Mean not reported (only reported collaborative)
** Mean not reported (only reported noncollaborative)
*** Mean not reported (investigated teaching style & moral development-significant)

Community college settings were used in three of the PALS studies. McGowan (1984) studied faculty learning styles and faculty teaching styles of 28 community college instructors. Three learning style inventories were used and no correlation was found between faculty learning styles and instructional orientation of faculty.

Scotney's (1986) study compared the degree of identification with the collaborative mode of teaching by part-time community college faculty and examined the relationship between the instructors' verbal behavior and the students' assessment of their instruction. PALS was used to determine the degree of support for the collaborative mode, the Flanders Interaction Analysis Categories recorded the classroom verbal behavior, and the researcher developed an instrument for student assessment. These 49 instructors were less supportive of the collaborative mode than the PALS comparative group, no significant difference occurred between the PALS score and the FIAC score, and no relationship between the student assessment and the PALS total score. Female and younger part-time teachers identified more strongly with the collaborative mode.

Graham (1988) examined the relationship between instructor characteristics and adult student retention. Instructors and students were selected from two community colleges. The results indicated that teachers who support

the teacher-centered approach retain more students the first half of the class and the teachers who support the learner-centered mode retain more students in the last half of the class. If was determined that instruction can make a difference in adult student retention in community college classes. Graham concluded that to retain maximum student retention, teacher behavior must be to modified in regard to the collaborative teaching-learning mode as the class proceeds.

Instructional orientation of faculty from colleges and universities were investigated. Clow (1986) examined the difference between 36 teachers' professed collaborative teaching mode and adult student perception of the collaborative teaching mode in the 36 classes. PALS was administered to faculty and Clow's Adapted Principles of Adult Learning Scale (APALS) was given to the adult students. The instructor mean score was compared to each student's mean score to determine significance. A significant difference was found between the teachers' professed teaching mode and the adult students' perception of their instructors' orientation. The teachers' professed instructional orientation was more collaborative than what the students perceived.

In 1988, Brooks studied the relationship between liberal arts college faculty and their students as to how they perceived instructional behaviors. The PALS instrument

measured the faculty practice of the adult learning principles and Brooks' Adult Learning Principles (ALP) instrument was used to determine the student perceptions of instructional behaviors. Instructors' mean scores were compared to the mean score of their class. It was found that student perceptions of instructional behaviors were significantly related to faculty perceptions, that none of the faculty instructional behaviors were learner-centered according to the PALS scale, that student preference was for more teacher-centered instruction, and that faculty with continuing professional educational experience were more situational in their teaching approach. No significance was found in regard to age, sex, level of education, years of teaching, or teaching area.

McCann found (1988) the relationship of teaching style and classroom orientation to academic achievement to be significant between students and teachers. The study was composed of 43 instructors and 75 nontraditional students and supported the andragogical model as being the most effective approach to adult learning. It was found that collaborative or learner-centered instructional orientation produced the greatest amount of academic achievement.

Premont (1989) surveyed 593 adult education instructors and 809 higher education instructors and determined that there was a significant difference between the two types of educators. Adult educators' instructional orientation was

more collaborative than the instructional orientation of higher education faculty.

In 1990, Sornkaew assessed the teaching styles of 236 university faculty in Thailand and found that when translated into Thai, the instrument was not adequate. The study concluded that Thai professors were noncollaborative in their instructional approach and that large class sizes tended to act as an impediment in utilizing the collaborative teaching-learning mode.

In these studies using the PALS instrument for measurement, the university or college instructors tended not to support the collaborative teaching-learning mode of instruction as did the comparative population of adult educators. See Table 4.

Table 4

College and University Studies Using the PALS Instrument

| Year | Faculty Sample Only (Setting) Study | Size | Mean | SD | Instruction |
|---|---|---|---|---|---|
| 1984 | McGowan (Comm College) | 28 | * | -- | -- |
| 1986 | Scotney (Comm College) | 49 | 133.79 | 14.50 | noncollaborative |
| 1988 | Graham (Comm College) | 253 | ** | -- | -- |
| 1986 | Clow (College) | 36 | 129.69 | 21.22 | noncollaborative |
| 1988 | Brooks (College) | 16 | 112.13 | 17.90 | noncollaborative |
| 1988 | McCann (University) | 43 | 116.89 | 23.05 | noncollaborative |
| 1989 | Premont (Higher Education) | 809 | 129.00 | 21.60 | noncollaborative |
| 1990 | Sornkaew (University) | 236 | *** | -- | noncollaborative |
| 1994 | Wilson (College) | 40 | 135.23 | 16.19 | noncollaborative |
| Total | | 1510 | | | |

* Mean not reported (investigated teaching style & learning style--not significant)
** Mean not reported (investigated teaching style & retention -- significant)
*** Mean not reported (only reported noncollaborative)

Other research investigated teaching styles, learning styles, classroom satisfaction, and the classroom environment. In a study by Welborn and Conti (1986), the influence of learning styles was slight, but teaching style was found to have a significant effect on the academic achievement of nontraditional students. It was found that students of teachers who moderately support the

collaborative mode had the greatest achievement and students of teachers with high scores on the PALS demonstrated only slightly above average achievement. Those students whose teachers had a strong preference for teacher-centered instruction produced the lowest amount of achievement.

Welborn and Conti (1986) maintain that the collaborative mode is the most effective method when teaching adults. Those teachers who practiced the collaborative mode, but who also kept sight of the demands of the curriculum, tended to foster the greatest student achievement. Knowles' (1970) recommendation that adult educators use the collaborative mode when teaching adults and Brookfield's thesis (1986) that teachers actively influence the teaching-learning encounter is supported by Welborn and Conti's study.

The principles of adult learning focus on the concept that adult learners have a clear perspective of their needs and meaningful learning occurs when the instruction they receive meet these needs. Studies by Brainard and Ommen (1977) and Hunter and McCantz (1977) indicated that age and sex are important factors affecting perception of the learning experience. They found that female learners are more concerned with a course meeting their needs and they are more sensitive to the type of learning environment. The study also indicated that adult students favor greater

participation in the classroom and want to be a part of the evaluation process.

A study by Lam (1985) tested the validity of andragogy as a theory of adult learning. His study sought to determine the extent to which andragogical principles truly represent the desired instructional practice in a university and community college setting. He extracted from the literature 15 adult learning principles and using these principles in questionnaire form, surveyed college students. He measured their desired learning experiences, their actual learning experiences, and investigated the discrepancies between the expectations and the real experiences.

Lam found that subject-centered approach is the predominant mode of instruction; older students demand that their learning experiences be in agreement with the stated andragogical principles; they expect constant feedback about their progress; they demand a greater voice in formulating the assessment format; and they consider self-criticism to be of primary importance (p. 50). Although his findings supported the principles of andragogy as being most preferred, the adult learners expressed a desire for more but not complete partnership in the planning, organizing, delivery, and evaluating of courses. Lam found that the learner-centered preference which is the basic premise of andragogy, was related to the maturity of the adult learners.

Cognitive maturity of the adult learner and adult learning preferences were also investigated in Perry's 1970 study, when he identified nine positions of adult ethical development. He found that students operating in a "dualistic" mode prefer a learning style and environment more structured than those who are more sophisticated in their learning and are operating in a "relativistic" position.

Simpson and Walker (1983) studied the differences between cognitive field-dependent students and field-independent students and came to the same conclusion as Perry, that although the age factor is significant in determining adult learner preferences, cognitive maturity plays an even more important role. Simpson and Walker said that field-independent students were more self directed and field-dependent students were uncomfortable when in control of their own learning. They desired more interaction with their instructors.

For many years adult educators accepted the teacher as a passive facilitator who served only as a catalysis for learning (Fellenz & Conti, 1989). Brookfield (1986) challenged that assumption and said that the teacher is an active member of the teaching-learning transaction and does influence the learning process. Kuchinskas (1979) agreed with Knowles that "the most revealing thing in the classroom was the overwhelming effect of the teacher's style on

everything and everybody else" (p. 270). Fischer and Fischer (1979) note that although the content of the course may change, the teaching behavior or teaching style persists. Bennett (1976) concluded that instructors hold firm opinions about teaching methods and that these relate strongly to classroom practice.

Instructor styles differ widely in the classroom. Darkenwald and Merriam (1982) distinguish between two entirely different instructor constructs, controlling and responsive, which elicit different types of behaviors from students. They conclude that it is possible that students will achieve at different rates if exposed to each teaching style. Beder and Darkenwald (1982) found that "teachers do teach adults differently from the way they teach children and pre-adults and that most of this variance is associated with the teacher's perceptions related to learner characteristics such as intellectual curiosity, openness, and degree of self-direction" (p. 153). Kidd (1973) raised the question that the appropriate contrast is not between children and adults but between teaching and learning. Rosenshine and Furst (1973) studied pupil behavior and found it to be far more revealing about the effectiveness of teaching than did the study of the teacher.

A considerable amount of research has been done on the relationship between learning outcomes and satisfaction in the classroom (Darkenwald & Valentine, 1986; Fraser,

Anderson, & Walberg, 1982; Fraser & Treagust, 1986; Trickett & Moos, 1974). According to Beer and Darkenwald (1989), the classroom social environment or "a climate that is not appropriate for adults will not facilitate learning or lead to satisfaction with the learning experience" (p. 33).

Knowles (1970) has emphasized the importance of the climate in creating an effective learning environment for adults. Variables such as teacher commitment, expectations, rewards, and praise, consistency, and clear goals influence the quality of the educational environment (Darkenwald & Gavin, 1987). The teaching style of the instructor influences the classroom social environment and plays an important role in the success and satisfaction of adult learners in the classroom (Spear & Mocker, 1984).

# Chapter 3

## METHODOLOGY

The purpose of this study was to investigate the instructional practices of teachers of adults, to investigate the instructional preferences of adult learners, and to measure the extent to which the instructional practices of teachers of adults are different from the instructional preferences of adult learners. The study was descriptive in nature in that it describes phenomena using descriptive statistical methodology to summarize, organize, and simplify data to increase knowledge about teachers of adults and adult learners (Borg, 1989, p. 5).

Descriptive research is dependent upon instrumentation for measurement. The type of instrument this study used was a self-reported survey to elicit responses from instructors teaching at one of the four extended campuses of a private postsecondary institution and adult learners enrolled in baccalaureate degree programs of the same institution.

This chapter includes a description of the population studied, instrumentation, research design, data collection protocol, and statistical analysis description.

## Description of the Population to be Studied

Four extended campuses of a private four-year college in Iowa were selected. This institution was selected for its participation in off-campus type programs that offer baccalaureate degree programs to adult learners. Each extended campus site provides junior/senior level course work for adult learners seeking a baccalaureate degree. The typology of the sites that are all located on community college campuses in Iowa is: (a) a student body composed mainly of nontraditional students, (b) adjunct faculty delivering instruction, (c) accelerated eight-week course format with three semester hours of college credit given for each course successfully completed, and (d) class periods of two and one-half hours which meet two evenings per week.

The faculty sample was adjunct instructors who taught during the same term of the academic year at one of the four sites. The instructors are contracted per term to teach a specific course at the extended campus and had other career responsibilities beside employment with the college. Each instructor had earned at least a master's degree in the field they were teaching.

The student sample consisted of students enrolled in courses of the faculty sample during the same term of the academic year at each of the sites. The students had at least 60 semester hours of previous college credit and were

classified as juniors or seniors. They were majoring in one of the following fields: business, social science, or education. They were either part-time students taking one course per term or full-time students taking two courses per term. Attendance at the extended campus varied from six weeks to three years depending on the student's matriculation date.

The instructor and student samples represent faculty and students enrolled during the same term of the academic year. A portion of the student sample was used for the study. All students were surveyed but only nontraditional students (25 years or older) were used for analysis. The sample was not randomly selected but represented, to the best of the researcher's ability, an unbiased sample.

## Research Questions

The following research questions guided this study:

Research Question One: Is there a difference between the instructional practices of teachers of adults and the instructional preferences of adult learners?

Research Question Two: How do the instructors' mean scores of this study compare to the hypothesized population mean of the PALS instrument?

Research Question Three: How do the nontraditional students' mean scores of this study compare to the hypothesized population mean of the PALS instrument?

Research Question Four: Is there a difference between the instructional practices of female instructors and male instructors?

Research Question Five: Is there a difference between the instructional practices of younger instructors (25-39 years) and older instructors (40 years or older)?

Research Question Six: Is there a difference between the instructional practices of instructors with an educator career background and instructors with a practitioner career background?

Research Question Seven: Is there a difference between the instructional practices of novice instructors who have taught one or two adult college credit courses and experienced instructors who have taught three or more adult college credit courses?

Research Question Eight: Is there a difference between the instructional practices of instructors teaching quantitative courses and instructors teaching qualitative courses?

Research Question Nine: Is there a difference between the instructional preferences of female and male nontraditional students?

Research Question Ten: Is there a difference between the instructional preferences of nontraditional students who have attended 0-11 months and nontraditional students who have attended one year or longer?

Research Question Eleven: Is there a difference among the instructional preferences of the nontraditional students majoring in business, those majoring in social science, and those majoring in education?

Research Question Twelve: Is there a difference between the instructional preferences of nontraditional students currently enrolled in a quantitative course and nontraditional students currently enrolled in a qualitative course?

## Primary Hypotheses

The following null hypotheses were tested:

$Ho^1$: There is no significant difference between the instructional practices of teachers of adults and the instructional preferences of adult learners.

$Ho^2$: There is no significant difference ($p < .05$) between the instructors' mean scores of this study and the hypothesized population mean of the PALS instrument.

$Ho^3$: There is no significant difference ($p < .05$) between the nontraditional students' mean scores of this study and the hypothesized population mean of the PALS instrument.

$Ho^4$: There is no significant difference ($p < .05$) between the instructional practices of female instructors and male instructors.

$Ho^5$: There is no significant difference ($p < .05$) between the instructional practices of younger instructors (25-39 years) and older instructors (40 years or older).

$Ho^6$: There is no significant difference ($p < .05$) between the instructional practices of instructors with an educator career background and instructors with a practitioner career background.

$Ho^7$: There is no significant difference ($p < .05$) between the instructional practices of novice instructors who have taught one or two adult college credit courses and experienced instructors who have taught three or more college credit courses.

$Ho^8$: There is no significant difference ($p < .05$) between the instructional practices of instructors

teaching quantitative courses and those teaching qualitative courses.

$Ho^9$: There is no significant difference ($p < .05$) between the instructional preferences of female and male nontraditional students.

$Ho^{10}$: There is no significant difference ($p < .05$) between the instructional preferences of nontraditional students who have attended 0-11 months and nontraditional students who have attended one year or longer.

$Ho^{11}$: There is no significant difference ($p < .05$) among the instructional preferences of the nontraditional students majoring in business, those majoring in social science, and those majoring in education.

$Ho^{12}$: There is no significant difference ($p < .05$) between the instructional preferences of the nontraditional students currently enrolled in quantitative courses and nontraditional students enrolled in qualitative courses.

## Instrumentation

The study required two instruments; one to measure the instructional practices of the faculty and the other to measure the instructional preferences of adult learners.

The Principles of Adult Learning Scale (PALS) was selected as the instrument to measure one of the dependent variables, the instructional practices of teachers of adults (see Appendix A). This 44-item instrument with a six-point modified Likert scale (always, almost always, often, seldom, almost never, and never) was developed by Gary Conti in 1978 to determine the extent to which instructors accept and employ various adult learning principles. The instrument as described by Conti allows teachers to respond to the frequency with which they practice a variety of instructional activities with the score indicating the extent to which teachers support the collaborative teaching-learning mode as described in the adult education literature (Conti, 1985a).

The instrument has 24 items that support the collaborative teaching-learning mode and the remaining 20 items represent a noncollaborative mode. The PALS instrument is divided into seven factors which, according to Conti, are the basic elements in an instructor's teaching style. They are: Factor 1, Learner-centered Activities; Factor 2, Personalizing Instruction; Factor 3, Relating to Experience; Factor 4, Assessing Student Needs; Factor 5, Climate Building; Factor 6, Participation in the Learning Process; and Factor 7, Flexibility for Personal Development. These seven factor scores indicate the extent of support for

the elements that constitute the collaborative teaching-learning mode. Conti (1985a) describes the factors as follows:

> 1. The main factor in PALS is Learner-centered Activities. This factor is made up of 12 negative items in the instrument. Teachers who score high on this factor allow initiating action by students and encourage students to take responsibility for their own learning.
>
> 2. Factor 2 is Personalizing Instruction. This factor contains six positive items and three negative items. Teachers who score high on this factor do a variety of things to meet the unique learning needs of each student. . . .
>
> 3. Factor 3 is Relating to Experience and consists of six positive items. Teachers who support this factor plan learning activities that take into account their student's prior experiences and encourage students to relate their new learning to experiences. . . .
>
> 4. Factor 4 is made up of four positive items related to Assessing Student Needs. For those teachers who score high in this area, treat students as adults by finding out what students want and need to know. . . .
>
> 5. Factor 5 is Climate Building, and it also contains four positive items. Those who score high on this factor provide a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of the learning program.
>
> 6. The four positive items in factor 6 relate to Participation in the Learning Process. Those who score high in this area share responsibility for planning, diagnosis of needs, developing objectives and evaluation methods.
>
> 7. Factor 7 contains five negative items which do not foster Flexibility for Personal Development. Instructors who oppose the collaborative mode consider themselves providers of knowledge rather than facilitators. (Conti, 1985a, pp. 9-10)

The PALS score indicates the degree to which instructors support the collaborative teaching-learning mode

as described in the adult education literature. The PALS mean is 146 with a standard deviation of 20. High scores indicate a collaborative teaching-learning mode and low scores indicate a noncollaborative mode.

In order to survey the students' preferences, the PALS instrument was adapted for this study by adding the words, "I prefer instructors who." The instrument, labeled the Student Preferences of the Principles of Adult Learning Scale (SPPALS), allowed the adult learners to respond to the frequency with which they prefer a variety of related instructional activities (see Appendix B). The survey was pilot tested with a sample of 30 students to determine the clarity and readability of the instrument.

Instrument Scoring Range

Both 44-item instruments, PALS and SPPALS, have the same score interpretation with a six-point modified Likert scale (0 - always, 1 - almost always, 2 - often, 3 - seldom, 4 - almost never, and 5 - never). The total score range is 0 to 220. Missing items or omitted items were assigned a neutral value of 2.5. An individual's total score on the instrument was calculated by summing the value of the responses to all items. Factor scores were calculated by summing the value of the responses for each item in the factor.

There were 24 positive items which were reversed scored on the Likert Scale from 0 to 5 points with a 0-always response given 5 points, indicating a high frequency of instructional practice or high frequency of the desired instructional preference. Items number 1, 3, 5, 8, 10, 14, 15, 17, 18, 20, 22, 23, 24, 25, 28, 31, 32, 34, 35, 36, 39, 42, 43, and 44 are positive items. For positive items, the following values are assigned: Always = 5, Almost Always = 4, Often = 3, Seldom = 2, Almost Never = 1, and Never = 0.

Twenty negative items with a 0 - always response were scored as 0 points, indicating a low frequency of instructional practice or low frequency of the desired instructional preference. Items number 2, 4, 6, 7, 9, 11, 12, 13, 16, 19, 21, 26, 27, 29, 30, 33, 37, 38, 40, and 41 are negative items. For negative items, the following values are assigned: Always = 0, Almost Always = 1, Often = 2, Seldom = 3, Almost Never = 4, and Never = 5.

Analysis of Factors and Factor Scoring Range

High total or overall scores indicate support for the collaborative teaching-learning mode and high scores on each factor indicate support for the concept implied for each element of the collaborative mode.

The range of scores for Factor 1, Learner-Centered Activities, is 0 to 60. This factor consists of 12 negative items. A high score for Factor 1 would relate to

instructional practices or preference of learner-centered activities where the focus is on the learner. Curriculum is developed around the student and is problem centered not subject centered. "Instructors practice behaviors which allow initiating action by the student and which encourage students to take responsibility for their own learning" (Conti, 1985a, p. 9). A low score would represent learning objectives and values established by the teacher which compare the students to outside standards, leaving to the learner the submissive role of only following a teacher's instruction.

The range of scores for Factor 2, Personalizing Instruction, is 0 to 45. This factor contains six positive items and three negative items. A high score for Factor 2 would relate to instructional practices or preference of instruction where activities vary to meet the unique learning needs of each student with objectives based on individual motives and abilities. "Instruction is self-paced . . . and cooperation rather than competition is encouraged" (Conti, 1985a, p. 10). A low score would represent a standardized teaching methodology that assumes all students have the same learning needs and interests.

The range of scores for Factor 3, Relating to Experience, is 0 to 30. This factor contains six positive items and no negative items. A high score for Factor 3 would relate to instructional practices or preference of

learning activities that take into account the student's prior experiences. Students are encouraged to ask questions. "When screened through experience, such consciousness-raising questioning can foster a student's growth from dependence on others to greater independence" (Conti, 1985a, p. 10). A low score would represent a teacher philosophy that believes past experiences are not relevant to the material being presented and therefore, should not be discussed in class.

The range of scores for Factor 4, Assessing Student Needs, is 0 to 20. This factor contains 4 positive items and no negative items. A high score for Factor 4 would relate to instructional practices or preference of a learning situation that treats the student as an adult by finding out what each student needs and wants to know. A low score would indicate a view of the learner as a dependent learner who is unable to determine his/her needs.

The range of scores for Factor 5, Climate Building, is 0 to 20. This factor contains four positive items and no negative items. A high score for Factor 5 would relate to instructional practices or preference for a friendly, informal learning environment where errors are accepted as a natural part of the learning experience. A low score would represent a more authoritative, formal, and controlling classroom.

The range of scores for Factor 6, Participation in the Learning Process, is 0 to 20. This factor contains four positive items and no negative items. A high score for Factor 6 would relate to instructional practices or preference for the teacher and the student sharing the responsibility for planning, diagnosis of needs, developing objectives, and evaluation methods. A low score would represent the teacher being responsible for the learning process.

The range of scores for Factor 7, Flexibility for Personal Development, is 0 to 25. This factor contains no positive items and 5 negative items. A high score for Factor 7 would relate to instructional practices or preference for teachers who view themselves as facilitators in the learning process, while a low score would represent the view of teachers being providers of knowledge.

Table 5 shows the range for the total or overall scores and the factors. Survey items within each factor are also shown. See Appendix C for instrument items categorized according to factors.

Table 5

Scoring Range and Listing of Items in Each Factor

| PALS & SPPALS | Scoring Range | Items Included in Factor |
|---|---|---|
| Factor #1 | 0-60 | 2,4,11,12,13,16,19,21,29,30,38,40 |
| Factor #2 | 0-45 | 3,9,17,24,32,35,37,41,42 |
| Factor #3 | 0-30 | 14,31,34,39,43,44 |
| Factor #4 | 0-20 | 5,8,23,25 |
| Factor #5 | 0-20 | 18,20,22,28 |
| Factor #6 | 0-20 | 1,10,15,36 |
| Factor #7 | 0-25 | 6,7,27,33 |
| Total Score | 0-220 | 1-44 |

## Research Design

"Survey research is a distinctive research methodology and has long been considered as a method of systematic data collection" (Borg, 1989, p. 416). This study used the survey method to elicit responses from teachers of adults to measure their instructional practices in the classroom. The extent to which an instructor utilizes the adult learning principles was measured through the self-reported survey instrument (PALS). The instructor indicated on the Instructor Information Form other demographics such as gender, age, educator or practitioner career background, and

number of courses taught (see Appendix D). These independent variables were analyzed with the dependent variable of instructional practices of teachers of adults.

The dependent variable, adult learners' preferences, was measured through the self-reported survey instrument, SPPALS. Demographics such as gender, age, major, and amount of time enrolled at the extension campus were collected on the Student Information Form (see Appendix E). These independent variables were analyzed to determine their relationship with the adult learner preferences.

Data gathered from the surveys were entered into the computer and the statistical software, Stat-View II, was used for data analysis.

## Data Collection Protocol

The four extended campuses selected were contacted by the researcher for a list of instructors who were teaching for the college during the 5:30 p.m. class period of the term. A letter was placed in the instructors' mailboxes requesting permission to visit their classroom during the seventh week of the 8-week term (see Appendix F). Any instructor who wished to decline participation could do so by indicating this desire to the extended campus director.

A researcher and assistant visited the classrooms at the four sites between 5:30 p.m. and 8:05 p.m to administer the survey. At that time, the researcher administered the

information form, survey, and answer sheet to the instructor and students. The researcher discussed the purpose of the survey, explained the information forms attached to the survey, and read the directions of the survey. Any questions from the instructor and/or students were answered. The instructor and the students responded to the survey at the same time by reading the items on the survey and indicating their practices or preferences on the answer sheet. The instructor and/or students could individually decline participation by not completing the survey.

The instructor based his/her responses to the survey on the course that he/she was currently teaching. The students responded according to their preferences for the type of course in which they were currently enrolled, either a quantitative or qualitative course. They were not to respond according to their preferences of the specific instructor's teaching methods of the course in which they were enrolled. Each class was classified either quantitative or qualitative depending on the nature of the course and the classification was indicated accordingly to the students and instructors. Math, physical science, accounting, finance, and psychology research courses were designated as quantitative courses. All others such as sociology, psychology, history, literature, education, biological science, geography, business, and communication courses were defined as qualitative.

The survey was completed in 10-15 minutes and was collected immediately upon completion of the instrument. Students who were not present for the class period were not surveyed.

## Data Analysis

Total scores on the PALS were tabulated on each instructor and were rated according to the instructional practices or extent of teacher support of the collaborative teaching-learning mode. The hypothesized population mean score of the instrument is 146. The total score of the SPPALS was tabulated for each student and the mean of self-reported perception of the instructional preferences for each class was determined.

In Hypothesis One an independent measures t-test was used to determine the difference between the instructional practices of teachers of adults and the instructional preferences of adult learners. A test for correlation was also conducted and the results are found in Appendix G. A single-sample t-test was used for analysis in Hypotheses Two and Three to compare instructors to the hypothesized population mean of the PALS instrument and students to the hypothesized population mean of the PALS instrument. The remaining nine hypotheses, with the exception of Hypothesis Eleven, used an independent measures t-test for analysis between variables. Hypothesis Eleven used Analysis of

Variance (ANOVA) to determine significance among the students majoring in business, social science, and education. The Scheffe Test was used to look at pair-wise comparisons for any significant ANOVA to determine the source of significance. Rejection for the hypothesis was at the < .05 level of significance.

# Chapter 4

# ANALYSIS OF DATA

## Summary of Study

The purpose of this study was to investigate the instructional practices of teachers of adults, to investigate the instructional preferences of adult learners, and to measure the extent to which the instructional practices of teachers of adults are different from the instructional preferences of adult learners. Scores of this study were compared to the hypothesized population mean of the PALS instrument (Conti, 1978). In addition, instructor variables such as gender, age, career background, number of courses taught, and type of course taught were examined. Student variables such as gender, length of attendance, major field of study, and type of course enrolled in were also investigated.

## Descriptive Analysis

This chapter contains the statistical analyses performed on the data which assisted in either confirming or rejecting each statistical hypothesis proposed in the study. The information presented in this chapter is divided into two parts: (a) frequency and percentage distributions of instructors' and students' demographic data, (b) descriptive

and inferential statistics on the instructional practices of teachers of adults and the instructional preferences of adult learners or nontraditional students.

## Demographic Data, Frequency and Percentage Distributions

Forty classrooms were surveyed. The study used two demographic questionnaires and two 44-item survey instruments. Forty instructors answered five demographic questions on the Instructor Information Form and answered 44 questions about their instructional practice in the classroom using the Principles of Adult Learning Scale (PALS) instrument. Their students answered five demographic questions on the Student Information Form and answered 44 questions about their instructional preferences in the classroom using the SPPALS instrument. Since the study focused on adult learners or nontraditional students, traditional students of the total sample were not used in the study. Table 6 shows the instruments the research sample of instructors and students used for this study.

Table 6

Instruments Used and Sample of Instructors and Students

| Instrument | Instructors | Nontraditional Students 25 Yrs or Older |
|---|---|---|
| Demographics: | | |
| Instructor Questionnaire | 40 | |
| Student Questionnaire | | 341 |
| Instruction Orientation/ Preferences: | | |
| PALS | 40 | |
| SPPALS (Adapted PALS) | | 341 |

The faculty sample consisted of 40 adjunct instructors of whom 15 (37.5%) were female and 25 (62.5%) were male. Fourteen (35%) were between the ages of 25-39 years and 26 (65%) were 40 years or older. Twenty-three (57.5%) had an educator career background and 17 (42.5%) had a practitioner career background. Five instructors (12.5%) had taught one or two adult college credit courses and 35 (87.5%) had taught three or more adult college credit courses. Thirteen (32.5%) were currently teaching quantitative courses while 27 (67.5%) were currently teaching qualitative courses. Table 7 shows the instructor demographic data, frequency and percentage distributions.

Table 7

Instructor Demographic Data, Frequency and Percentage Distributions

| Demographic Data | | Frequency | Percentage |
|---|---|---|---|
| Gender: | Female | 15 | 37.5 |
| | Male | 25 | 62.5 |
| Age: | 25-39 years | 14 | 35.0 |
| | 40 years or older | 26 | 65.0 |
| Career Background: | Educator | 23 | 57.5 |
| | Practitioner | 17 | 42.5 |
| Courses Taught: | 1-2 courses | 5 | 12.5 |
| | 3 or more courses | 35 | 87.5 |
| Type of Course: | Quantitative | 13 | 32.5 |
| | Qualitative | 27 | 67.5 |

The focus of the study was the difference between the instructional practices of teachers of adults and the instructional preferences of adult learners or nontraditional students. There were 341 adult learners or nontraditional students (25 years or older) used in this study. Of the 341 students, 220 (64.5%) were female and 121 (35.5%) were male students; 143 (41.9%) were business majors, 107 (31.3%) were social science majors, 88 (26%) were education majors, and 3 (0.8%) were non degree seeking students. One hundred and seventy-one (50.1%) students had attended the extended campuses between 0-11 months and 170

(49.9%) had attended one year or longer. One hundred and sixteen (34%) students were currently enrolled in quantitative courses and 225 (66%) were enrolled in qualitative courses. Table 8 shows adult learners' or nontraditional students' (25 years or older) demographic data, frequency and percentage distributions.

Table 8

Nontraditional Student Demographic Data, Frequency and Percentage Distributions

| Demographic Data | | Frequency | Percentage |
|---|---|---|---|
| Gender: | Female | 220 | 64.5 |
| | Male | 121 | 35.5 |
| Major: | Business | 143 | 41.9 |
| | Social Science | 107 | 31.3 |
| | Education | 88 | 26.0 |
| | Non degree | 3 | 0.8 |
| Attendance: | 0-11 months | 171 | 50.1 |
| | 1 year or longer | 170 | 49.9 |
| Type of Course Enrolled: | Quantitative | 116 | 34.0 |
| | Qualitative | 225 | 66.0 |

## Summary of Demographic Data, Frequency and Percentage Distributions

In summary, two-thirds of the faculty sample were male, 40 years or older, and currently teaching a qualitative course. Four-fifths of the faculty sample had taught at least three or more adult college credit courses. The career backgrounds were split with a somewhat higher number of faculty with educator career backgrounds.

The study focused on the nontraditional student (25 years or older) and two-thirds of this group were females. The highest number of students were majoring in business with social science next, and education with the least number of students. The students were evenly distributed according to attendance of 0-11 months or one year or longer and two-thirds of them were currently enrolled in a qualitative course.

## Analysis of Statistical Data

All 12 null hypotheses are reviewed in this chapter. All factor findings are included on the hypothesis charts but only the significant factors are reviewed. Hypothesis One used an independent measures t-test to determine the differences between the instructional practices of instructors and the instructional preferences of adult learners. A single sample t-test was used for analysis for

Hypotheses Two and Three to compare instructors to the hypothesized population mean of the PALS instrument and students to the hypothesized population mean of the PALS instrument. The remaining nine hypotheses, with the exception of Hypothesis Eleven, used an independent measures t-test for analysis between variables. Hypothesis Eleven used Analysis of Variance (ANOVA) to determine significance among the students majoring in business, social science, and education. The Scheffe Test was used to look at pair-wise comparisons for any significant ANOVA to determine the source of significance. Rejection for the hypothesis was at the < .05 level of significance.

## Descriptive and Inferential Statistical Findings

### Findings Concerning Null Hypothesis One

> There is no difference between the instructional practices of teachers of adults and the instructional preferences of adult learners.

The null hypothesis that there is no difference between the instructional practices of teachers of adults and the instructional preferences of adult learners was not rejected. The mean score of the instructors in this study was 135.23 with a standard deviation of 16.19. The nontraditional students' mean score was 134.34 with a standard deviation of 17.25.

In Factor 1, Learner-centered Activities, the instructors' mean score was 39.38 with a standard deviation

of 5.14 and the students' mean score was 35.09 with a standard deviation of 6.76. A significant difference was found. The instructors practiced behaviors which allowed initiating action by students and encouraged students to take responsibility for their own learning to a significantly greater extent than the students preferred.

In Factor 4, Assessing Student Needs, the instructors' mean score was 11.35 with a standard deviation of 3.32 and the students' mean score was 13.84 with a standard deviation of 3.64. A significant difference was found. The students preferred instructors who treated them as adults by finding out what students want and need to know to a significantly greater extent than the instructors practiced.

In Factor 6, Participation in Learning Process, the instructors' mean score was 10.98 with a standard deviation of 3.00 and the students' mean score was 12.84 with a standard deviation of 3.36. A significant difference was found. The students preferred instructors who shared responsibility for planning, diagnosis of needs, developing objectives and evaluation methods to a significantly greater extent than the instructors practiced.

In Factor 7, Flexibility for Personal Development, the instructors' mean score was 12.05 with a standard deviation of 3.07 and the students' mean score was 9.63 with a standard deviation of 3.07. A significant difference was found. The instructors viewed themselves as facilitators

rather than disseminators of knowledge to a significantly greater extent than the students preferred.

Table 9 shows the descriptive and inferential statistics of instructors and nontraditional students.

Table 9

Statistics of Instructors and Nontraditional Students

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Instructors (PALS) | 40 | 135.23 | 16.19 | -0.31 | 0.7568 |
| Nontraditional Students (SPPALS) | 341 | 134.34 | 17.25 | | |

| Seven Factors | Instructors Mean | SD | Nontraditional Students Mean | SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 39.38 | 5.14 | 35.09 | 6.76 | -3.87 | 0.0001** |
| 2. Personalizing Instruction | 23.92 | 5.35 | 24.71 | 5.72 | 1.04 | 0.2990 |
| 3. Relating to Experience | 21.25 | 4.02 | 22.43 | 4.30 | 1.65 | 0.0992 |
| 4. Assessing Student Needs | 11.35 | 3.32 | 13.84 | 3.64 | 4.12 | 0.0001** |
| 5. Climate Building | 16.30 | 2.13 | 15.79 | 2.74 | -1.14 | 0.2555 |
| 6. Participation in Learning Process | 10.98 | 3.00 | 12.84 | 3.36 | 3.35 | 0.0009** |
| 7. Flexibility for Personal Development | 12.05 | 3.07 | 9.63 | 3.07 | -4.12 | 0.0001** |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Hypothesis Two

> There is no significant difference ($p < .05$) between the instructors' mean scores of this study and the hypothesized population mean of the PALS instrument.

Conti (1978) determined the mean for the PALS instrument as 145.69 and the standard deviation as 21.9 (p. 122). Each factor mean and standard deviation was also determined. Factor 1, Learner-Centered Activities, has a hypothesized mean of 38, and standard deviation of 8.3; Factor 2, Personalizing Instruction, has a hypothesized mean of 31 and standard deviation of 6.8; Factor 3, has a hypothesized mean of 21 and standard deviation of 4.9; Factor 4, Assessing Student Needs, has a hypothesized mean of 14 and standard deviation of 3.6; Factor 5, Climate Building, has a hypothesized mean of 16 and standard deviation of 3.0; Factor 6, Participation in the Learning Process, has a hypothesized mean of 13 and standard deviation of 3.5; and Factor 7, Flexibility for Personal Development, has a hypothesized mean of 13 and standard deviation of 3.9 (Conti, 1985a, p. 11).

The null hypothesis that there is no significant difference between the instructors' scores in this study and the hypothesized population mean of the PALS instrument was rejected. A one-sample t-test was used for the comparative values using Conti's mean as the hypothesized population mean. A significant difference was found between the instructors' mean score in this study and the hypothesized

population mean of the PALS instrument. The mean score of the instructors in this study was 135.23 with a standard deviation of 16.19. This PALS score of 135.23 is significantly different from the hypothesized PALS score of 146 at the .0001 level of significance. The instructors in this study did not support a collaborative teaching-learning mode according to the hypothesized mean of the PALS.

In Factor 2, Personalizing Instruction, the instructors' mean score was 23.92 with a standard deviation of 5.34. Since the hypothesized mean for this factor is 31, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. The instructors in Conti's (1983) groups used a variety of things to meet the unique learning needs of each student to a significantly greater extent than the instructors in this study.

In Factor 4, Assessing Student Needs, the instructors' mean score was 11.35 with a standard deviation of 3.32. Since the hypothesized mean for this factor is 14, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. The instructors in Conti's (1983) groups treated students as adults by finding out what students want and need to know to a significantly greater extent than the instructors in this group.

In Factor 6, Participation in the Learning Process, the instructors' mean score was 10.98 with a standard deviation of 3.00. Since the hypothesized mean for this factor is 13, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. The instructors in Conti's (1983) groups shared responsibility with the students for planning, diagnosis of needs, developing objectives and evaluation methods to a significantly greater extent than did instructors in this group.

In Factor 7, Flexibility for Personal Development, the instructors' mean score was 12.05 with a standard deviation of 3.07. Since the hypothesized mean for this factor is 13, there is a marginally significant difference from the PALS hypothesized mean at the .0576 level of significance. The instructors in this study viewed themselves as disseminators of knowledge rather than as a facilitator.

Table 10 compares instructors in this study to the hypothesized population mean of the PALS instrument. The PALS hypothesized mean is 146 for the PALS instrument as set by Conti (1983).

Table 10

Instructors and Hypothesized Population Mean of PALS

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | Pooled Variance Estimate p-value |
|---|---|---|---|---|---|
| Instructors in this Study | 40 | 135.23 | 16.19 | -4.21 | 0.0001** |
| PALS Standards | 778 | 146.00 | 20.00 | | |

| Seven Factors | Instructors in this Study Mean | Instructors in this Study SD | PALS Mean | t-value | p-value |
|---|---|---|---|---|---|
| 1. Learner-centered Activities | 39.38 | 5.14 | 38 | 1.69 | 0.0988 |
| 2. Personalizing Instruction | 23.92 | 5.35 | 31 | -8.36 | 0.0001** |
| 3. Relating to Experience | 21.25 | 4.02 | 21 | 0.39 | 0.6965 |
| 4. Assessing Student Needs | 11.35 | 3.32 | 14 | -5.05 | 0.0001** |
| 5. Climate Building | 16.30 | 2.13 | 16 | 0.89 | 0.3778 |
| 6. Participation in Learning Process | 10.98 | 3.00 | 13 | -4.27 | 0.0001** |
| 7. Flexibility for Personal Development | 12.05 | 3.07 | 13 | -1.96 | 0.0576* |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

## Findings Concerning Hypothesis Three

> There is no significant difference ($p < .05$) between the nontraditional students' mean in this study and hypothesized mean of the PALS instrument.

The null hypothesis that there is no significant difference between the students' scores in this study and the hypothesized population mean of the PALS instrument was

rejected. A one-sample t-test was used for the comparative values using Conti's mean as the hypothesized population mean. A significant difference was found between the nontraditional students' mean score in this study and the hypothesized mean of the PALS instrument. The mean score of the students was 134.34 with a standard deviation of 17.25. This SPPALS score of 134.34 is significantly different from the hypothesized mean of the PALS score of 146 at the .0001 level of significance. The students in this study did not prefer a collaborative teaching-learning mode according to the hypothesized mean of the PALS instrument.

In Factor 1, Learner-Centered Activities, the students' mean score was 35.09 with a standard deviation of 6.76. Since the hypothesized mean for this factor is 38, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. Conti's (1983) groups preferred teaching practices that allowed initiating action by students and encouraged students to take responsibility for their own learning to a significantly greater extent than did students of this study.

In Factor 2, Personalizing Instruction, the students' mean score was 24.71 with a standard deviation of 5.72. Since the hypothesized mean for this factor is 31, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. Conti's (1983) groups used a variety of things to meet the unique learning

needs of each student to a significantly greater extent than the students of this study preferred.

In Factor 3, Relating to Experience, the students' mean score was 22.43 with a standard deviation of 4.30. Since the hypothesized mean for this factor is 21, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. The students in this study preferred instructors who related new learning to the students' prior experiences to a significantly greater extent than Conti's groups practiced.

In Factor 7, Flexibility for Personal Development, the students' mean score was 9.63 with a standard deviation of 3.56. Since the hypothesized mean for this factor is 13, this factor is significantly different from the PALS hypothesized mean at the .0001 level of significance. The students in this study preferred instructors who viewed themselves as disseminators of knowledge rather than as facilitators.

Table 11 shows nontraditional students compared to the hypothesized population mean of the PALS instrument. The PALS hypothesized mean is 146 for the PALS instrument as set by Conti (1983).

Table 11

Nontraditional Students and Hypothesized Population Mean of PALS

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | Pooled Variance Estimate p-value |
|---|---|---|---|---|---|
| Nontraditional Students | 341 | 134.34 | 17.25 | -12.49 | 0.0001** |
| PALS Standards | 778 | 146.00 | 20.00 | | |

| Seven Factors | Nontraditional Students in This Study Mean | SD | PALS Mean | t-value | p-value |
|---|---|---|---|---|---|
| 1. Learner-centered Activities | 35.09 | 6.76 | 38 | -7.93 | 0.0001** |
| 2. Personalizing Instruction | 24.71 | 5.72 | 31 | -20.30 | 0.0001** |
| 3. Relating to Experience | 22.43 | 4.30 | 21 | 6.14 | 0.0001** |
| 4. Assessing Student Needs | 13.84 | 3.64 | 14 | -.82 | 0.4142 |
| 5. Climate Building | 15.79 | 2.74 | 16 | -1.42 | 0.1560 |
| 6. Participation in Learning Process | 12.84 | 3.36 | 13 | -0.89 | 0.3764 |
| 7. Flexibility for Personal Development | 9.63 | 3.56 | 13 | -17.48 | 0.0001** |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Null Hypothesis Four

> There is no significant difference ($p < .05$) between the instructional practices of female instructors and male instructors.

The null hypothesis that there is no significant difference between the instructional practices of female instructors and male instructors was not rejected. A two-sample t-test was used for the comparative values. A significant difference was not found between the instructional practices of female instructors and the instructional practices of male instructors. The PALS mean score of the 15 female instructors was 138.07 with a standard deviation of 15.08. The PALS mean score of the 25 male instructors was 133.52 with a standard deviation of 16.89.

Table 12 shows the descriptive and inferential statistics of instructors by gender.

Table 12

Statistics of Instructors by Gender

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Female | 15 | 138.07 | 15.08 | 0.86 | 0.3969 |
| Male | 25 | 133.52 | 16.89 | | |

| Seven Factors | Female Mean | Female SD | Male Mean | Male SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 41.07 | 4.68 | 38.36 | 5.23 | -1.65 | 0.1079 |
| 2. Personalizing Instruction | 0.67 | 3.74 | 23.48 | 6.15 | -0.67 | 0.5042 |
| 3. Relating to Experience | 0.73 | 4.65 | 20.96 | 3.67 | -0.58 | 0.5630 |
| 4. Assessing Student Needs | 0.93 | 3.01 | 11.00 | 3.50 | -0.86 | 0.3959 |
| 5. Climate Building | 0.07 | 2.19 | 16.44 | 2.12 | 0.53 | 0.5975 |
| 6. Participation in Learning Process | 0.33 | 2.32 | 11.36 | 3.33 | 1.05 | 0.3007 |
| 7. Flexibility for Personal Development | 0.27 | 3.08 | 11.92 | 3.12 | 0.34 | 0.7345 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Null Hypothesis Five

> There is no significant difference ($p < .05$) between the instructional practices of younger instructors who are between the ages of 25 and 39 years and the older instructors who are over 40 years of age.

The null hypothesis that there is no significant difference between the instructional practices of younger instructors (25-39 years) and older instructors (over 40 years) was not rejected. A two-sample t-test was used for the comparative values. A significant difference was not found between the instructional practices of younger instructors and the instructional practices of older instructors. The PALS mean score of the 14 younger instructors was 135.29 with a standard deviation of 12.93. The PALS mean score of the 26 older instructors was 135.19 with a standard deviation of 17.94.

There were no significant differences found in six of the seven factors. Factor 5, Climate Building, was marginally significant at the .0561 level of significance. The factor mean score for the younger instructors was 15.43 with a standard deviation of 2.06. The older instructors' mean score for this factor was 16.77 with a 2.05 standard deviation. The older instructors established a learning environment that was friendly and informal, where risk taking is encouraged and errors are accepted as a natural part of the learning experience to a significantly greater extent than younger instructors.

Table 13 shows the descriptive and inferential statistics of instructors by age.

Table 13

Statistics of Instructors by Age

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Younger (25-39 years) | 14 | 135.29 | 12.98 | 0.02 | 0.9864 |
| Older (40 years or older) | 26 | 135.19 | 17.94 | | |

| Seven Factors | Younger Mean | Younger SD | Older Mean | Older SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 39.14 | 4.37 | 39.50 | 5.59 | -0.21 | 0.8372 |
| 2. Personalizing Instruction | 23.57 | 2.44 | 24.12 | 6.44 | -0.30 | 0.7635 |
| 3. Relating to Experience | 21.50 | 4.15 | 21.12 | 4.03 | 0.28 | 0.7773 |
| 4. Assessing Student Needs | 11.64 | 2.95 | 11.19 | 3.54 | 0.41 | 0.6875 |
| 5. Climate Building | 15.43 | 2.06 | 16.77 | 2.05 | -1.97 | 0.0561* |
| 6. Participation in Learning Process | 11.50 | 2.03 | 10.69 | 3.41 | 0.81 | 0.4238 |
| 7. Flexibility for Personal Development | 12.50 | 2.93 | 11.81 | 3.18 | 0.68 | 0.5036 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Null Hypothesis Six

> There is no significant difference ($p < .05$) between the instructional practices of instructors with an educator career background and instructors with a practitioner career background.

The null hypothesis that there is no significant difference between the instructional practices of instructors with an educator career background and instructors with a practitioner career background was not rejected. A two sample t-test was used for the comparative values. A significant difference was not found between the instructional practices of instructors with an educator career background and instructors with a practitioner career background. The PALS mean score of the 23 instructors with an educator career background was 136.57 with a standard deviation of 13.16. The PALS mean score of the 17 instructors with a practitioner career background was 133.41 with a standard deviation of 19.87.

There were no significant differences found in six of the seven factors. Factor 4, Assessing Student Needs, was significant at the .0188 level of significance. The factor mean score for the instructors with an educator career background was 12.39 with a standard deviation of 2.55. The instructors with a practitioner career background had a mean score of 9.94 for this factor with a 3.77 standard deviation. The instructors with an educator career background treated students as adults by finding out what

students want and need to know to a significantly greater extent than instructors with a practitioner background.

Table 14 shows the descriptive and inferential statistics of instructors by career background (educator or practitioner).

Table 14

Statistics of Instructors by Career Background

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Educator Career Background | 23 | 136.57 | 13.16 | 0.6 | 0.5494 |
| Practitioner Career Background | 17 | 133.41 | 19.87 | | |

| Seven Factors | Educator Mean | SD | Practitioner Mean | SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 39.35 | 5.36 | 39.41 | 5.00 | -0.04 | 0.9696 |
| 2. Personalizing Instruction | 24.39 | 4.15 | 23.29 | 6.73 | 0.64 | 0.5285 |
| 3. Relating to Experience | 21.43 | 3.75 | 21.00 | 4.47 | 0.33 | 0.7403 |
| 4. Assessing Student Needs | 12.39 | 2.55 | 9.94 | 3.77 | 2.45 | 0.0188** |
| 5. Climate Building | 16.52 | 2.25 | 16.00 | 1.97 | 0.76 | 0.4502 |
| 6. Participation in Learning Process | 10.65 | 2.14 | 11.41 | 3.91 | -0.79 | 0.4357 |
| 7. Flexibility for Personal Development | 11.83 | 3.01 | 12.35 | 3.22 | -0.53 | 0.5983 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Null Hypothesis Seven

> There is no significant difference ($p < .05$) in instructional practices between novice instructors who have taught 1-2 courses and experienced instructors who have taught 3 or more courses.

The null hypothesis that there is no significant difference between the instructional practices of novice instructors and experienced instructors was not rejected. A two sample t-test was used for the comparative values. A significant difference was not found between the instructional practices of novice instructors and the instructional practices of experienced instructors. The PALS mean score of the 5 novice instructors was 134.0 with a standard deviation of 18.44 The PALS mean score of the 35 experienced instructors was 135.4 with a standard deviation of 16.14. Although there was no significant difference, experienced instructors supported the collaborative teaching-learning mode to a greater extent than did novice instructors.

There were no significant differences found in the seven factors.

Table 15 shows the descriptive and inferential statistics of instructors by number of adult college credit courses taught.

Table 15

Statistics of Instructors by Number of Courses Taught

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Novice Instructors (1-2 courses) | 5 | 134.07 | 18.44 | -0.18 | 0.8592 |
| Experienced Instructors (3 or more) | 35 | 135.4 | 16.14 | | |

| Seven Factors | Novice Mean | Novice SD | Experienced Mean | Experienced SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 42.2 | 3.03 | 38.97 | 5.28 | 1.33 | 0.1928 |
| 2. Personalizing Instruction | 23.6 | 2.07 | 23.97 | 5.69 | -0.14 | 0.8868 |
| 3. Relating to Experience | 21.6 | 5.50 | 21.20 | 3.87 | 0.21 | 0.8384 |
| 4. Assessing Student Needs | 9.6 | 3.44 | 11.60 | 3.27 | -1.27 | 0.2114 |
| 5. Climate Building | 16.4 | 2.07 | 16.29 | 2.16 | 0.11 | 0.9122 |
| 6. Participation in Learning Process | 10.2 | 3.49 | 11.09 | 2.96 | -0.61 | 0.5438 |
| 7. Flexibility for Personal Development | 10.4 | 3.29 | 12.29 | 3.02 | -1.30 | 0.2030 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

## Findings Concerning Null Hypothesis Eight

There is no significant difference ($p < .05$) between the instructional practices of instructors teaching quantitative courses and instructors teaching qualitative courses.

The null hypothesis that there is no significant difference between the instructional practices of instructors teaching quantitative courses and instructors teaching qualitative courses was not rejected. A two-sample t-test was used for the comparative values. A significant difference was not found between the instructional practices of instructors teaching quantitative courses and the instructional practices of instructors teaching qualitative courses. The PALS mean score of the 13 quantitative course instructors was 130.15 with a standard deviation of 11.00. The PALS mean score of the 27 qualitative course instructors was 137.67 with a standard deviation of 17.84.

There were no significant differences found in six of the seven factors. Factor 3, Relating to Experience, was significant at the .0256 level of significance. The factor mean score for the quantitative course instructors was 19.23 with a standard deviation of 3.30. The qualitative course instructors' mean score for this factor was 22.22 with a 4.03 standard deviation. Instructors teaching qualitative courses planned activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences to a significantly greater extent than instructors teaching quantitative courses.

Table 16 shows descriptive and inferential statistics of instructors by type of course currently being taught (quantitative/qualitative).

Table 16

Statistics of Instructors by Type of Course Currently Being Taught

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Quantitative Course | 13 | 130.15 | 11.00 | -1.39 | 0.1723 |
| Qualitative Course | 27 | 137.67 | 17.84 | | |

| Seven Factors | Quantitative Mean | SD | Qualitative Mean | SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 38.54 | 5.77 | 39.78 | 4.88 | -0.71 | 0.4825 |
| 2. Personalizing Instruction | 23.31 | 3.45 | 24.22 | 6.10 | -0.50 | 0.6190 |
| 3. Relating to Experience | 19.23 | 3.30 | 22.22 | 4.03 | -2.32 | 0.0256** |
| 4. Assessing Student Needs | 10.92 | 2.90 | 11.56 | 3.53 | -0.56 | 0.5789 |
| 5. Climate Building | 16.62 | 2.22 | 16.15 | 2.11 | 0.65 | 0.5222 |
| 6. Participation in Learning Process | 10.69 | 2.18 | 11.11 | 3.36 | -0.41 | 0.6848 |
| 7. Flexibility for Personal Development | 10.85 | 3.56 | 12.63 | 2.69 | -1.77 | 0.0854 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Findings Concerning Null Hypothesis Nine

> There is no significant difference ($p < .05$) between the instructional preferences of female students and instructional preferences of male students.

The null hypothesis that there is no significant difference between the instructional preferences of female students and the instructional preferences of male students was rejected. A two-sample t-test was used for the comparative values. A significant difference was found between the instructional preferences of the 220 female students and the instructional preferences of the 121 male students at the .0013 level of significance. The SPPALS mean score of the female students was 136.55 with a standard deviation of 16.35. The SPPALS mean score of the male students was 130.31 with a standard deviation of 18.15. Female students preferred the collaborative teaching-learning mode to a significantly greater extent than male students.

Two of the seven factors were found significant. In Factor 1, Learner-Centered Activities, the female students' mean score was 35.75 with a standard deviation of 6.67 compared to the male students' mean score of 33.90 with a standard deviation of 6.79. This factor was significant at the .0155 level of significance. Female students preferred instructors who allowed initiating action by students and encouraged students to take responsibility for their own

learning to a significantly greater extent than did male students.

In Factor 2, Personalizing Instruction, the female students' mean score was 25.61 with a standard deviation of 5.29 compared to the male students' mean score of 23.07 and a standard deviation of 6.11. This factor was significant at the .0001 level of significance. The female students preferred instructors who used a variety of things to meet the unique learning needs of each student to a significantly greater extent than did male students.

Table 17 shows the descriptive and inferential statistics of nontraditional students by gender.

Table 17

Statistics of Nontraditional Students by Gender

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Female | 220 | 136.55 | 16.35 | -3.25 | 0.0013** |
| Male | 121 | 130.31 | 18.15 | | |

| Seven Factors | Female Mean | Female SD | Male Mean | Male SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 35.75 | 6.67 | 33.90 | 6.79 | -2.43 | 0.0155** |
| 2. Personalizing Instruction | 25.61 | 5.29 | 23.07 | 6.11 | -4.01 | 0.0001** |
| 3. Relating to Experience | 22.64 | 4.34 | 22.05 | 4.23 | -1.21 | 0.2252 |
| 4. Assessing Student Needs | 13.83 | 3.62 | 13.86 | 3.70 | 0.08 | 0.9378 |
| 5. Climate Building | 15.99 | 2.68 | 15.42 | 2.82 | -1.84 | 0.0665 |
| 6. Participation in Learning Process | 13.00 | 3.33 | 12.55 | 3.41 | -1.16 | 0.2463 |
| 7. Flexibility for Personal Development | 9.74 | 3.63 | 9.45 | 3.42 | -0.72 | 0.4720 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

## Findings Concerning Null Hypothesis Ten

There is no significant difference ($p < .05$) between the instructional preferences of students who have attended 0-11 months and those students who have attended one year or longer.

The null hypothesis that there is no significant difference between the instructional preferences of students who have attended 0-11 months and those who have attended one year or longer was not rejected. A two sample t-test was used for the comparative values. A significant difference was not found between the instructional preferences of students who have attended 0-11 months and students who have attended one year or longer. The SPPALS mean score of the 171 students who have attended 0-11 months was 134.56 with a standard deviation of 16.50. The SPPALS mean score of the 170 students who attended one year or longer was 134.12 with a standard deviation of 18.01.

Of the seven factors, three of the factors were found significant. In Factor 1, Learner-centered Activities, the students who attended 0-11 months had a mean score of 34.38 with a standard deviation of 6.61. The mean score of students who attended one year or longer was 35.81 with a standard deviation of 6.86. The level of significance was marginal at .0505. Students who had longer attendance preferred instructors who allowed initiating action by students and encouraged students to take responsibility for their own learning to a significantly greater extent than did those students who had attended a shorter period of time.

In Factor 4, Assessing Student Needs, the students who attended 0-11 months had a mean score of 14.56 with a standard deviation of 3.32. The mean score of students who attended one year or longer was 13.12 and a standard deviation of 3.82. The level of significance was .0002. Students who had a shorter attendance period preferred instructors who treated them as adults by finding out what students want and need to know to a significantly greater extent than those students who had attended a longer period of time.

In Factor 5, Climate Building, the students who attended 0-11 months had a mean score of 16.10 with a standard deviation of 2.56. The mean score of students who attended for one year or longer was 15.48 with a standard deviation of 2.89. The level of significance was .0358. Students who had a shorter attendance period preferred instructors who provided a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of learning to a significantly greater extent than students who had attended a longer period of time.

Table 18 shows the descriptive and inferential statistics of nontraditional students by length of attendance at the extended campuses.

Table 18

Statistics of Nontraditional Students by Length of Attendance

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Attendance (0-11 months) | 171 | 134.56 | 16.50 | 0.23 | 0.815 |
| Attendance (1 year or more) | 170 | 134.12 | 18.01 | | |

| Seven Factors | 0-11 Months Mean | SD | 1 Year or More Mean | SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 34.38 | 6.61 | 35.81 | 6.86 | -1.98 | 0.0505** |
| 2. Personalizing Instruction | 24.62 | 5.60 | 24.81 | 5.85 | -0.30 | 0.7645 |
| 3. Relating to Experience | 22.55 | 4.30 | 22.31 | 4.31 | 0.51 | 0.6104 |
| 4. Assessing Student Needs | 14.56 | 3.32 | 13.12 | 3.82 | 3.71 | 0.0002** |
| 5. Climate Building | 16.10 | 2.56 | 15.48 | 2.89 | 1.24 | 0.0358** |
| 6. Participation in Learning Process | 13.06 | 3.09 | 12.61 | 3.61 | 1.24 | 0.2145 |
| 7. Flexibility for Personal Development | 9.29 | 3.45 | 9.98 | 3.64 | -1.81 | 0.0708 |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

## Findings Concerning Null Hypothesis Eleven

There is no significant difference ($p < .05$) among the instructional preferences of students majoring in business, students majoring in social science, and students majoring in education.

The null hypothesis that there is no significant difference among the instructional preferences of students majoring in business, students majoring in social science, and students majoring in education was rejected. A significant difference was found among students majoring in business, social science, and education. Using the Scheffe Test for pair-wise comparisons, it was found that the significance was due to the lower mean of the business group as compared to education and social science independently (business vs. education = 11.44 and business vs. social science = 13.29). Table 19 indicates an F ratio of 17.65 and a p-value of 0.0001. The differences among the business majors, social science majors, and education majors were significant with the .0001 level of significance.

The SPPALS mean scores of the students in specific majors were: 143 business majors' mean score was 128.11 with a standard deviation of 14.54; 107 social science majors' mean score was 139.00 with a standard deviation of 18.13; and 89 education majors' mean score was 138.82 with a standard deviation of 17.47. The education and social science majors preferred a collaborative teaching-learning mode to a significantly greater extent than the business majors.

Table 19 shows analysis of variance among students majoring in business, social science, and education on the PALS total and the seven factors.

Table 19

Statistics of Nontraditional Students by Majors

| Population | Number of Cases | Mean | SD |
|---|---|---|---|
| Business | 143 | 128.11 | 14.54 |
| Social Science | 107 | 139.00 | 18.13 |
| Education | 88 | 138.82 | 17.47 |

| Seven Factors | Business Mean | Business SD | SScience Mean | SScience SD | Education Mean | Education SD |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 34.48 | 6.10 | 36.45 | 7.50 | 34.48 | 6.60 |
| 2. Personalizing Instruction | 22.99 | 5.15 | 25.28 | 6.08 | 26.72 | 5.47 |
| 3. Relating to Experience | 21.50 | 4.02 | 22.89 | 4.66 | 23.39 | 4.10 |
| 4. Assessing Student Needs | 13.06 | 3.40 | 14.14 | 3.96 | 14.82 | 3.33 |
| 5. Climate Building | 15.07 | 2.81 | 16.26 | 2.64 | 16.36 | 2.54 |
| 6. Participation in Learning Process | 12.17 | 3.13 | 13.38 | 3.68 | 13.28 | 3.15 |
| 7. Flexibility for Personal Development | 8.85 | 3.26 | 10.6 | 3.84 | 9.77 | 3.43 |

Findings Concerning Null Hypothesis Twelve

> There is no significant difference ($p < .05$) between the instructional preferences of students currently enrolled in a quantitative course and students currently enrolled in a qualitative course.

The null hypothesis that there is no significant difference between students enrolled in quantitative courses

and students enrolled in qualitative courses was rejected. A two-sample t-test was used for the comparative values. A significant difference was found between the instructional preferences of the 116 students enrolled in a quantitative course and the instructional preferences of the 225 students enrolled in a qualitative course. Significance was at the .0001 level. The SPPALS mean score of the quantitative students was 128.62 with a standard deviation of 16.30. The SPPALS mean score of the qualitative students was 137.28 with a standard deviation of 17.01. Those students enrolled in a qualitative course preferred the collaborative teaching-learning mode to a significantly greater extent than did students enrolled in a quantitative course.

Of the seven factors, all were significant with the exception of Factor 1, Learner-centered Activities.

Table 20

Analysis of Variance among Business, Social Science, and Education Majors

| | F test | p-value |
|---|---|---|
| Total | 17.65 | 0.0001** |
| Seven Factors | | |
| 1. Learner-centered Activities | 3.17 | 0.0433** |
| 2. Personalizing Instruction | 13.20 | 0.0001** |
| 3. Relating to Experience | 6.24 | 0.0022** |
| 4. Assessing Student Needs | 7.12 | 0.0009** |
| 5. Climate Building | 8.78 | 0.0002** |
| 6. Participation in Learning Process | 5.15 | 0.0062** |
| 7. Flexibility for Personal Development | 7.77 | 0.0005** |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

Table 20 A - Total Score of SPPALS by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 9635.2 | 4817.60 | 17.65 |
| Within groups | 335 | 91435.3 | 272.94 | p = 0.0001** |
| Total | 337 | 101070.5 | | |

Table 20 B - Factor 1 Learner-Centered Activities by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 284.49 | 142.25 | 3.17 |
| Within groups | 335 | 15034.09 | 44.88 | p = 0.0433** |
| Total | 337 | 15318.58 | | |

Table 20 C - Factor 2 Personalizing Instruction by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 810.28 | 405.14 | 13.2 |
| Within groups | 335 | 10280.48 | 30.69 | p = 0.0001** |
| Total | 337 | 11090.76 | | |

Table 20 D - Factor 3 Relating to Experience by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 225.67 | 112.83 | 6.24 |
| Within groups | 335 | 6057.27 | 18.08 | p = 0.0022** |
| Total | 337 | 6282.93 | | |

Table 20 E - Factor 4 Assessing Student Needs by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 181.64 | 90.82 | 7.12 |
| Within groups | 335 | 4273.54 | 12.76 | p = 0.0009** |
| Total | 337 | 4455.18 | | |

Table 20 (continued)

Table 20 F - Factor 5 Climate Building by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 126.90 | 63.45 | 8.78 |
| Within groups | 335 | 2420.34 | 7.22 | p = 0.0002** |
| Total | 337 | 2547.23 | | |

Table 20 G - Factor 6 Participation in Learning Process by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 113.53 | 56.76 | 5.15 |
| Within groups | 335 | 3689.16 | 11.01 | p = 0.0062** |
| Total | 337 | 3802.69 | | |

Table 20 H - Factor 7 Flexibility for Personal Development by Majors

| Source | DF | SS | MS | F-test |
|---|---|---|---|---|
| Between groups | 2 | 189.89 | 94.95 | 7.77 |
| Within groups | 335 | 4095.79 | 12.23 | p = 0.0005** |
| Total | 337 | 4285.68 | | |

** Significant at the < .05 Alpha level.
 * Marginally significant at the < .05 alpha level.

In Factor 1, Learner-Centered Activities, students in quantitative courses had a mean score of 34.75 with a standard deviation of 6.24 and students in qualitative courses had a mean score of 35.27 and a standard deviation of 7.02. This was the only factor in this hypothesis that was not significant. Students in qualitative courses preferred learner-centered activities to a slightly greater extent than did students in quantitative courses.

Table 21 shows the descriptive and inferential statistics of students by the type of course.

Table 21

Descriptive Statistics of Nontraditional Students by Type of Course in Which Currently Enrolled

| Population | Number of Cases | Mean | SD | Pooled Variance Estimate t-value | p-value |
|---|---|---|---|---|---|
| Quantitative Course | 116 | 128.62 | 16.30 | -4.52 | 0.0001** |
| Qualitative Course | 225 | 137.28 | 17.01 | | |

| Seven Factors | Quantitative Mean | SD | Qualitative Mean | SD | t-value | p-value |
|---|---|---|---|---|---|---|
| 1. Learner-centered Activities | 34.75 | 6.24 | 35.27 | 7.02 | -0.67 | 0.5011 |
| 2. Personalizing Instruction | 23.66 | 5.04 | 25.26 | 5.98 | -2.47 | 0.0140** |
| 3. Relating to Experience | 21.22 | 4.16 | 23.05 | 4.25 | -3.79 | 0.0002** |
| 4. Assessing Student Needs | 12.90 | 3.50 | 14.32 | 3.62 | -3.48 | 0.0006** |
| 5. Climate Building | 15.09 | 2.86 | 16.15 | 2.61 | -3.45 | 0.0006** |
| 6. Participation in Learning Process | 12.09 | 3.07 | 13.22 | 3.45 | -2.97 | 0.0032** |
| 7. Flexibility for Personal Development | 8.91 | 3.11 | 10.00 | 3.72 | -2.71 | 0.0071** |

** Significant at the < .05 alpha level.
* Marginally significant at the < .05 alpha level.

## Summary of Descriptive and Inferential Statistics

In summary, there was no difference found between the instructional practices of teachers of adults and the instructional preferences of adult learners. Hypothesis One was not rejected.

The instructors in this study did not practice a collaborative teaching-learning mode according to the PALS hypothesized population mean. The PALS mean score for the instructors was 135.23 with a standard deviation of 16.19 compared to the PALS hypothesized population mean of 146. Hypothesis Two was rejected. Factor 2, Personalizing Instruction; Factor 4, Assessing Student Needs; Factor 6, Participation in the Learning Process; and Factor 7, Flexibility for Personal Development were found to be significant.

Students in this study did not prefer a collaborative teaching-learning mode as described by Conti. The students' mean score was 134.34 with a standard deviation of 17.25 compared to the hypothesized population mean of 146. Hypothesis Three was rejected. Factor 1, Learner-centered Activities; Factor 2, Personalizing Instruction; Factor 3, Relating to Experience; and Factor 7, Flexibility for Personal Development were significant.

Significant differences were not found in hypotheses investigating the instructor variables. Hypothesis Four was

not rejected and no factors were significant. Hypothesis Five was not rejected. Factor 5, Climate Building, was significant. Hypothesis Six was not rejected. Factor 4, Assessing Student Needs, was significant. Hypothesis Seven was not rejected and no factors were significant. Hypothesis Eight was not rejected and Factor 3, Relating to Experience, was significant.

Significant differences were found in three of the four student variables. There was no significant difference found in the student variable of length of attendance. Hypothesis Ten was not rejected. Factor 1, Learner-centered Activities; Factor 4, Assessing Student Needs; and Factor 5, Climate Building, were significant.

Student variables of gender, field of study, and type of course enrolled found significant differences. Hypothesis Nine was rejected. Factor 1, Learner-centered Activities, and Factor 2, Personalizing Instruction, were significant. Female students preferred a collaborative teaching-learning mode to a significantly greater extent than male students. Hypothesis Eleven was rejected. All factors were significant. Education majors preferred a collaborative teaching-learning mode to a significantly greater extent than social science majors. Social science majors preferred a collaborative mode to a significantly greater extent than business majors. Hypothesis Twelve was rejected. All factors were significant with the exception

of Factor 1, Learner-centered Activities. Students in qualitative courses preferred a collaborative mode to a greater extent than students in quantitative courses preferred.

Table 22 shows the summary of the significant findings with the higher mean score indicated by a H and the lower mean score indicated by a L.

Table 22

Summary of Significant Findings

| | Hypotheses | PALS Total | PALS Factors ++ F1 | F2 | F3 | F4 | F5 | F6 | F7 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Instructors | | H | | | L | | L | H |
| | Students | | L | | | H | | H | L |
| 2 | Instructors | L | | L | | L | | L | L |
| | PALS Standard | H | | H | | H | | H | H |
| 3 | Students | L | L | L | H | | | | L |
| | PALS Standard | H | H | H | L | | | | H |
| 4 | Instructors Female | | | | | | | | |
| | Instructors Male | | | | | | | | |
| 5 | Instructors Younger | | | | | | L | | |
| | Instructors Older | | | | | | H | | |
| 6 | Instructors Educator | | | | | H | | | |
| | Instructors Practitioner | | | | | L | | | |
| 7 | Instructors Novice | | | | | | | | |
| | Instructors Experienced | | | | | | | | |
| 8 | Instructors Teaching Quant Crse | | | | L | | | | |
| | Instructors Teaching Qual Crse | | | | H | | | | |
| 9 | Students Female | H | H | H | | | | | |
| | Students Male | L | L | L | | | | | |
| 10 | Student Attendance 0-11 Months | | L | | | H | H | | |
| | Student Attendance 1 Year on | | H | | | L | L | | |
| 11 | Students Business Major | | | | | | | | |
| | Students Social Science | L | H | L | L | L | L | H | H |
| | Students Education | H | L | H | H | H | H | L | L |
| 12 | Students Enrolled in Quant Crse | H | | H | H | H | L | H | H |
| | Students Enrolled in Qual Crse | L | | L | L | L | H | L | L |

H = Higher Mean Score.
L = Lower Mean Score.

++ PALS Seven Factors: F1 = Learner-Centered Activities; F2 = Personalizing Instruction; F3 = Relating to Experience; F4 = Assessing Student Needs; F5 = Climate Building; F6 = Participation in Learning Process; F7 = Flexibility for Personal Development

# Chapter 5
# SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

## Introduction

The problem of this study was to investigate the extent to which differences existed between the instructional practices of teachers of adults and the instructional preferences of adult learners. The scores of the teachers and the scores of the students were also compared to the PALS hypothesized population mean to determine the extent of practice or preference of the collaborative teaching-learning mode. The instructors' practices were further investigated to determine if differences can be attributed to gender, age, career background, amount of teaching experience, and type of course facilitated. In addition, the preferences of adult learners were investigated to determine if differences can be attributed to gender, length of attendance, major field of study, and type of course enrolled.

The study utilized the Principles of Adult Learning Scale (PALS) to measure the instructional practices of teachers of adults and the instrument, Student Preferences of the Principles of Adult Learning Scale (SPPALS), to measure the instructional preferences of adult learners.

The instruments describe seven factors which are elements of the teaching-learning mode. They are Learner-centered Activities, Personalizing Instruction, Relating to Experience, Assessing Student Needs, Climate Building, Participation in the Learning Process, and Flexibility for Personal Development. The sample consisted of 40 adjunct instructors who taught early evening courses during an eight-week term at four extended campuses of a private four-year college and 341 nontraditional students (25 years and older) enrolled in their classes.

A test for independent measures was used to determine the extent of difference between the instructional practices of teachers of adults and the instructional preferences of adult learners. This test was also used to determine the extent of difference between the instructor variables and student variables with the exception of the student variable on the major field of study. The Analysis of Variance (ANOVA) was utilized to determine the extent of difference among the students majoring in business, social science, and education. The Scheffe Test analyzed the pair-wise comparisons for any significant ANOVA to determine the source of significance. To compare the instructors and students to the hypothesized population mean of the PALS instrument, a single sample t-test was used. Rejection for the hypotheses was at the $< .05$ level of significance.

## Summary of Findings

The findings of this study revealed that there was no significant difference between the scores of teachers and the scores of adult learners. The instructional practices of the teachers and the instructional preferences of adult learners were found to be almost identical. While there was no overall significance, there was significant differences in four of the seven factors. Instructors practiced behaviors which allowed initiating action by students and encouraged students to take responsibility for their own learning (Learner-centered Activities) to a greater extent than students preferred. Instructors viewed themselves as facilitators rather than as providers of knowledge (Flexibility for Personal Development) to a greater extent than learners preferred. The students preferred instructors who treated students as adults by finding out what students want and need to know (Assessing Student Needs) to a greater extent than teachers practiced. The students preferred instructors who allowed students to identify problems that they wished to solve and allowed the students to participate in making decisions about the topics that will be covered in class to a greater extent than instructors practiced (Participation in the Learning Process).

Research questions comparing the teachers of this study to the PALS hypothesized population mean and the learners to

the PALS hypothesized population mean, were found to be significant. Differences were found between the scores of this study and the PALS mean of 146. The teachers and students exhibited a noncollaborative instructional orientation when compared to the PALS hypothesized population mean.

In the research question relating to the comparison of the teachers of this study to the PALS mean, four factors were found to be significant. The PALS mean score suggests that instructors used of a variety of methods to meet the unique needs of each student to a greater extent than the instructors of this study practiced (Personalizing Instruction). The PALS mean score suggests that instructors treated students as adults by finding out what students want and need to know to a greater extent than the instructors of this study practiced (Assessing Student Needs). The PALS mean score suggests that instructors shared responsibility for planning, diagnosis of needs, and developing objectives and evaluation methods to a greater extent than the instructors of this study practiced (Participation in the Learning Process). The PALS mean score suggests that instructors viewed themselves as facilitators rather than disseminators of knowledge to a greater extent than the instructors of this study practiced (Flexibility for Personal Development).

In the research question relating to the comparison of adult learners of this study to the PALS mean score, four factors were found to be significant. The PALS mean score suggests that instructors allowed initiating action by students and encouraged students to take responsibility for their own learning to a greater extent than students of this study preferred (Learner-centered Activities). The PALS mean score suggests that instructors used a variety of things to meet the unique needs of each student to a greater extent than students of this study preferred (Personalizing Instruction). The PALS mean score suggests that instructors viewed themselves as facilitators rather than disseminators of knowledge to a greater extent than students preferred (Flexibility for Personal Development). The students of this study preferred instructors who planned learning activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences to a greater extent than the PALS mean score suggested (Relating to Experience).

Of the five instructor variables investigated, gender, age, career background, amount of teaching experience, and type of course facilitated, none were significant. The instructor variables did not influence the instructional practices of teachers of adults in this study. When analyzing the factors in the research questions on instructor variables, three factors were found significant.

Older instructors (over 40 years of age) provided a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of the learning process to a greater extent than younger instructors provided (Climate Building). Instructors with an educator career background treated students as adults by finding out what students want and need to know to a greater extent than instructors with a practitioner career background (Assessing Student Needs). Instructors teaching qualitative courses planned activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences to a greater extent than the instructors teaching quantitative courses (Relating to Experience).

Of the four student variables investigated, gender, length of attendance, major field of study, and type of course enrolled, three research questions were found to be significant. The student variables of gender, major field of study, and type of course enrolled influenced the students' instructional preferences. Female students preferred instructional practices that were collaborative to a greater extent than male students. Students majoring in education preferred instructional practices that were collaborative to a greater extent than social sciences majors and social science majors preferred collaborative instructional practices to a greater extent than business

majors. Students in qualitative courses preferred instructional practices that were collaborative to a greater extent than students in quantitative courses.

When analyzing the factors in the research questions on student variables, 17 factors were found significant. Female students preferred instructors who allowed initiating action by students and encouraged students to take responsibility for their own learning to a greater extent than male students preferred (Learner-centered Activities), and preferred instructors who used a variety of things to meet the unique needs of each student (Personalizing Instruction) to a greater extent than male students preferred. Students attending the extended campus sites for a longer period of time (one year or longer) preferred instructors who allowed initiating action by the student and encouraged students to take responsibility for their own learning to a greater extent than students attending less than one year (Learner-centered Activities). Students attending less than one year preferred instructors who treated students as adults by finding out what students want and need to know (Assessing Student Needs) and preferred instructors who provided a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of the learning process (Climate Building) to a greater extent than students attending one year or longer.

When analyzing students by major, all factors were significant. Students' preference of instructional practices depended upon their major field of study. Students in the field of education preferred instructors who used a variety of things to meet the unique needs of each student (Personalizing Instruction); who planned learning activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences (Relating to Experience); who treated students as adults by finding out what students want and need to know (Assessing Student Needs); and who provided a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of the learning process to a greater extent than students in social science fields and in turn social science students to business majors. Students in social science fields preferred instructors who allowed initiating action by students and encouraged students to take responsibility for their own learning (Learner-centered Activities) to a greater extent than education and business majors. Students in social sciences preferred instructors who shared responsibility for planning, diagnosis of needs, and developing objectives and evaluation methods (Participation in the Learning Process) and preferred instructors who viewed themselves as facilitators rather than disseminators of knowledge (Flexibility for Personal Development) to a

greater extent than education majors, and in turn education majors to business majors.

When analyzing students by the type of course enrolled, all factors were significant with the exception of Learner-centered Activities. Students' preference of instructional practices depended upon the type of course. Students in qualitative courses preferred instructors who used a variety of things to meet the unique needs of each student (Personalizing Instruction); who planned learning activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences (Relating to Experience); who treated students as adults by finding out what students want and need to know (Assessing Student Needs); who provided a friendly informal atmosphere where risk taking is encouraged and errors are accepted as a natural part of the learning process (Climate Building); who shared responsibility for planning, diagnosis of needs, and developing objectives and evaluation methods (Participation in the Learning Process); and preferred instructors who viewed themselves as facilitators rather than disseminators of knowledge (Flexibility for Personal Development) to a greater extent than students in quantitative courses.

## Discussion

The discussion is grouped into four parts: (a) the difference between the instructional practices of teachers of adults and the instructional preferences of adult learners, (b) the comparison of the results of this study to the PALS hypothesized population mean, (c) the instructor variables, and (d) the student variables.

The mean scores of the teachers of adults (135.23) mirrored the mean scores of adult learners (134.34) indicating that instructors' practices in the classroom were similar to student preferences. According to Darkenwald and Gavin (1987), discrepancies between expectations and actual experiences promote dissatisfaction. Although teacher practices and student preferences of the teaching-learning mode were noncollaborative, student expectations tended to be met, thereby suggesting a seemingly positive classroom climate where learning is facilitated (p. 152).

Significant factors were found when comparing teacher practices to student preferences. Instructors practiced behaviors which allowed initiating action by students and encouraged students to take responsibility for their own learning (Learner-centered Activities) and viewed themselves as facilitators rather than as disseminators of knowledge to a greater extent than adult learners preferred (Flexibility for Personal Development). Students preferred more

teacher-centered activities and less independence in the learning situation which is predictable. Because of previous schooling, adults sometimes "perceive the appropriate role of learner to be that of a dependent, more or less passive recipient of transmitted content even though they may be completely self-directing in all other aspects of their lives" (Knowles, 1980, p. 46).

Of the other two significant factors found when comparing teacher practices to student preferences, students preferred instructors who treated them as adults by finding out what students want and need to know (Assessing Student Needs) and preferred instructors who allowed students to identify problems that they wished to solve and to make decisions about the topics that will be covered in class to a greater extent than instructors practiced (Participation in the Learning Process). The findings are not unusual as students would prefer instructional practices that provide individual attention and sharing in the decision making process. Adults "see themselves as being able to make their own decisions and face the consequences, to manage their own lives" (Knowles, 1980, p. 46). Instructors also might have a tendency to be more teacher-centered and might "want to keep a learner dependent long after the learner has become able to be self-directing" (p. 43), thereby inhibiting the student from participating in needs diagnosis, goals formation, and evaluation assessment.

The second part of the discussion focuses on the teachers and students of this study compared to the PALS hypothesized population mean of 146. A significant difference was found between the instructional practices of the teachers' mean score of 135.23 and the instructional preferences of the adult learners' mean score of 134.34. For Conti's PALS instrument (1978), scores that were above the mean of 146 were interpreted as representing the collaborative teaching-learning mode while those scores falling below the mean indicated a noncollaborative approach. With Conti's interpretation, the teachers and students were noncollaborative in their instructional practices and instructional preferences.

When comparing the scores of this study to the PALS hypothesized population mean, all teacher and student significant factors were noncollaborative compared to PALS with the exception of one factor. Students preferred instructors who planned activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences to a greater extent than suggested by the PALS mean (Relating to Experience). Relating prior experiences to new learning is important to the adult learner. Not only are "their experiences an expression of self-identity" (Knowles, 1973, p. 58), but course work becomes "more meaningful when organized around

problems students encounter in everyday living" (Knowles, 1980, p. 50).

Another reason that the student scores (Relating to Experience) might be more collaborative when compared to the PALS hypothesized mean is that Conti's sample surveyed instructors, not students. Students appreciate instructors who value their experiences and might be more cognizant of their preference for this type of instructional practice. Conti's instructors also were not teaching in a postsecondary setting where specific courses are a requirement for graduation. Difficult subjects and required course work become relevant when learning is organized around situations in which students are familiar.

The instructor and student noncollaborative orientation of this study, when compared to the PALS mean, might indicate that instructional practices and/or preferences in a college setting tend to be noncollaborative. Six studies out of eight that used the PALS instrument in a college setting had reported mean scores of instructors and/or students below the PALS hypothesized population mean which indicated a noncollaborative orientation (Brooks, 1988; Clow, 1986; McCann, 1988; Premont, 1989; Scotney, 1986; Sornkaew, 1990). (See Table 4.) Specifically, in Premont's study (1989), a comparison was made between the instructional orientation of adult educators and higher education faculty. The findings indicated that adult

educators were significantly collaborative in their teaching-learning approach as compared to the noncollaborative orientation of higher education faculty.

Findings might also indicate that the PALS instrument is not an appropriate measure for the college setting. Conti (1978) developed the PALS instrument to originally measure the collaborative teaching-learning mode for adult basic education instructors. His sample for generalizability of the instrument (1983) consisted of adult educators in GED and ABE programs, business and industry, and in health facilities. (See Table 2.)

> The instrument itself may only be valid for selected groups where members of the group being assessed by PALS possess an orientation to adult learning and development as a result of their professional training. . . . those without (this) orientation may find items on the PALS difficult to interpret, and thus respond differently to the items. (Scotney, 1986)

The third part of the discussion is the instructor variables. The study found no significant differences in any of the instructor variables indicating instructional practices were not influenced by gender, age, teaching experience, career background, or type of course facilitating. However, the opposite was found in studies by Van Allen (1982) and Scotney (1986). They found that age influenced teachers' instructional practices. Younger teachers were more collaborative in their instructional approach than older instructors. Pearson (1980) and Douglass (1982) found that formal training influenced

instructional orientation as instructors with formal training were more collaborative in their instructional approach. Other studies found that instructors with formal training and greater teaching experience were more collaborative in their instructional orientation (Douglass, 1982; Pearson, 1980; Scotney, 1986; Taylor, 1990; Van Allen, 1982).

Looking at the three significant factors within the instructor variables, instructors over 40 years of age established a friendly informal learning environment where the acceptance of errors was a natural part of the learning experience (Climate Building) to a greater extent than younger instructors. This finding would seem appropriate because traits such as patience and tolerance for others might come with maturity and be reflected in the classroom by the older instructors. Instructors with an educator career background treated students as adults by finding out what students want and need to know (Assessing Student Needs) to a greater extent than instructors with a practitioner career background. Instructors with a educator career background might have the professional training and expertise to analyze student needs. Instructors teaching qualitative courses planned learning activities that take into account their students' prior experiences and encouraged students to relate their new learning to experiences to a greater extent than instructors teaching

quantitative courses (Relating to Experience). This factor could be explained in that quantitative courses cover mathematical processes and would emphasize formulas and figures more than student experiences while instructors teaching qualitative course would draw on the students' experiences to make the learning situation more relevant.

The fourth part of the discussion is the student variables. The study found significant differences between female and male student preferences, among students majoring in business, social science, and education, and between student preferences in qualitative and quantitative courses.

This study found that gender differences influenced instructional preferences of students. Female students preferred a more collaborative instructional approach than male students. These results are supported by other studies (Beer & Darkenwald, 1989; Davenport & Davenport, 1984; Grubbs, 1981; Van Allen, 1982) where female students preferred a collaborative mode of instruction. Focusing on the factors of this research question, female students preferred instructors who allowed initiating action by students and encouraged students to take responsibility for their own learning (Learner-centered Activities) and who used a variety of things to meet the unique needs of each student (Personalizing Instruction) to a greater extent than male students preferred. This finding would support the study by Beer and Darkenwald (1989) that "women students

perceive a greater degree of involvement in the classroom than men students" (p. 39).

The study found that student preferences are influenced by situational aspects of the nature of the curriculum. Students seemingly preferred different teaching methods depending upon their field of study and the type of course enrolled. Douglass (1982) also found significant differences when investigating disciplines of study. Significant differences were found in all of the factors with students majoring in education preferring a collaborative instructional approach to a greater extent than social science majors and to a greater extent than business majors. The significant difference is attributed to the business majors noncollaborative orientation.

Students enrolled in qualitative courses preferred a collaborative instructional approach to a greater extent than those in quantitative courses. Significant differences were found in all of the factors with the exception of one factor, Learner-centered Activities. "Many returning students have deficient quantitative skills" (Miller, 1987, p. 4) and students majoring in business fields have a heavier load in quantitative course work. These students and those enrolled in quantitative courses preferred a teacher-centered approach in the classroom. Buchanan and Sherman (1981) found that adults have characteristics that are congruent with the adult learning characteristics but

where they have skill gaps they prefer a teacher-centered instructional approach. This could explain the reason why students in business majors prefer a noncollaborative instructional approach compared to students majoring in education and social science.

This study suggests adult learners' preferences of an instructional teaching-learning approach depend upon situational aspects of the learning experience. Knowles (1980) suggested that the andragogical model should be used alongside the pedagogical model and "whenever a pedagogical assumption is the realistic one, then pedagogical strategies are appropriate, regardless of the age of the learner" (p. 43). Conti (1989) states that

> although the adult education literature supports the collaborative mode as the most appropriate way to teach adults teachers cannot blindly accept the major tenets of the literature . . . they are general in nature and do not take into consideration the unique situations in which many adult educators find themselves. (pp. 5-6)

"What this means in practice is that educators now have the responsibility to check out which assumptions are realistic in a given situation" (Knowles, 1973, p. 63).

## Conclusions

1. The similarities that exist between the instructional practices of teachers of adults and instructional preferences of adult learners would suggest a

positive classroom environment is evident in formalized postsecondary education.

2. The results of this study and others that have used the PALS instrument in formal postsecondary educational credit programs would indicate that both the instructor and adult learners practice and prefer a more noncollaborative instructional approach than exists in an adult education noncredit setting.

3. The results of this study and others that have used the PALS instrument in formal postsecondary educational credit programs would indicate that the norms used by Conti may not be standard for all applications.

4. Instructional practices of teachers of adults seem not to be influenced by variables typically studied such as gender, career background, amount of teaching experience, and type of course facilitated.

5. Instructional preferences of adult learners are situational. That situational variables influence the instructional preferences of adult learners calls to question the often stated premise that the collaborative teaching-learning mode is the most effective method for teaching adults. Furthermore, the situational preferences would support Knowles' contention that collaborative and noncollaborative teaching should not be viewed as dichotomous but rather as alternative assumptions of the teaching-learning approach.

## Recommendations

1. Continue to investigate the differences between the instructional practices of teachers of adults and the instructional preferences of adult learners.

2. Continue to investigate the instructional practices of teachers of adults and the instructional preferences of adult learners in college credit programs and those teachers and adult learners in noncredit programs.

3. Analyze previous studies using the PALS instrument for appropriateness of the PALS hypothesized population mean in various settings.

4. Design an instrument more specific to the college setting that measures the collaborative teaching-learning mode.

5. Continue to investigate instructional preferences of adult learners regarding the situational aspects of gender, major field of study, course content, and other variables.

6. Expand the research sample to include full-time faculty and traditional age students in higher education.

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# Appendix A

## PRINCIPALS OF ADULT LEARNING SCALE (PALS) AND FORMS

Directions: The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you most frequently practice the action described in the item. Please relate your answers to what you do in this type of classroom. Your choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. On your answer sheet, circle 0 if you always do the event; circle number 1 if you almost always do the event; circle number 2 if you often do the event; circle number 3 if you seldom do the event; circle number 4 if you almost never do the event; and circle number 5 if you never do the event. If the item does not apply to you, circle number 5 for never.

| Always | Almost Always | Often | Seldom | Almost Never | Never |
|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 |

1. I allow students to participate in developing the criteria for evaluating their performance in class.
2. I use disciplinary action when it is needed.
3. I allow older students more time to complete assignments when they need it.
4. I encourage students to adopt middle class values.
5. I help students diagnose the gaps between their goals and their present level of performance.
6. I provide knowledge rather than serve as a resource person.
7. I stick to the instructional objectives that I write at the beginning of a program.
8. I participate in the informal counseling of students.
9. I use lecturing as the best method for presenting my subject material to adult students.
10. I arrange the classrooms so that it is easy for students to interact.
11. I determine the educational objectives for each of my students.
12. I plan units which differ as widely as possible from my student's socio-economic backgrounds.
13. I get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.
14. I plan learning episodes to take into account my student's prior experiences.
15. I allow students to participate in making decisions about the topics that will be covered in class.
16. I use one basic teaching method because most adults have a similar style of learning.

17. I use different techniques depending on the students being taught.

18. I encourage dialogue among my students.

19. I use written tests to assess the degree of academic growth rather than to indicate new directions for learning.

20. I utilize the many competencies that most adults already possess to achieve educational objectives.

21. I use what history has proven that adults need to learn, as my chief criteria for planning learning episodes.

22. I accept errors as a natural part of the learning process.

23. I use individual conferences to help students identify their educational needs.

24. I let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.

25. I help my students develop short-range as well as long-range objectives.

26. I maintain a well-disciplined classroom to reduce interferences to learning.

27. I avoid discussion on controversial subjects that involve value judgments.

28. I allow my students to take periodic breaks during class.

29. I use methods that foster quiet, productive desk-work.

30. I use tests as my chief method of evaluating students.

31. I plan activities that will encourage each student's growth from dependence on others to greater independence.

32. I gear my instructional objectives to match the individual abilities and needs of the students.

33. I avoid issues that relate to the student's concept of himself/herself.

34. I encourage my students to ask questions about the nature of their society.

35. I allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.

36. I have my students identify their own problems that need to be solved.

37. I give all students in the class the same assignment on a given topic.

38. I use materials that were originally designed for students in elementary and secondary schools.

39. I organize adult learning episodes according to the problems that my students will encounter in everyday life.

40. I measure a student's long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.

41. I encourage competition among my students.

42. I use different materials with different students.

43. I help students relate new learning to their prior experiences.

44. I teach units about problems of everyday living.

## Principles of Adult Learning Scale (PALS)
## Answer Sheet

| | Always | Almost Always | Often | Seldom | Almost Never | Never | | Always | Almost Always | Often | Seldom | Almost Never | Never |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.** | 0 | 1 | 2 | 3 | 4 | 5 | **23.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **2.** | 0 | 1 | 2 | 3 | 4 | 5 | **24.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **3.** | 0 | 1 | 2 | 3 | 4 | 5 | **25.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **4.** | 0 | 1 | 2 | 3 | 4 | 5 | **26.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **5.** | 0 | 1 | 2 | 3 | 4 | 5 | **27.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **6.** | 0 | 1 | 2 | 3 | 4 | 5 | **28.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **7.** | 0 | 1 | 2 | 3 | 4 | 5 | **29.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **8.** | 0 | 1 | 2 | 3 | 4 | 5 | **30.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **9.** | 0 | 1 | 2 | 3 | 4 | 5 | **31.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **10.** | 0 | 1 | 2 | 3 | 4 | 5 | **32.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **11.** | 0 | 1 | 2 | 3 | 4 | 5 | **33.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **12.** | 0 | 1 | 2 | 3 | 4 | 5 | **34.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **13.** | 0 | 1 | 2 | 3 | 4 | 5 | **35.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **14.** | 0 | 1 | 2 | 3 | 4 | 5 | **36.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **15.** | 0 | 1 | 2 | 3 | 4 | 5 | **37.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **16.** | 0 | 1 | 2 | 3 | 4 | 5 | **38.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **17.** | 0 | 1 | 2 | 3 | 4 | 5 | **39.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **18.** | 0 | 1 | 2 | 3 | 4 | 5 | **40.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **19.** | 0 | 1 | 2 | 3 | 4 | 5 | **41.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **20.** | 0 | 1 | 2 | 3 | 4 | 5 | **42.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **21.** | 0 | 1 | 2 | 3 | 4 | 5 | **43.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **22.** | 0 | 1 | 2 | 3 | 4 | 5 | **44.** | 0 | 1 | 2 | 3 | 4 | 5 |

## Principles of Adult Learning Scale (PALS)
## Scoring Sheet

| | Always | Almost Always | Often | Seldom | Almost Never | Never | | Always | Almost Always | Often | Seldom | Almost Never | Never |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.** | 5 | 4 | 3 | 2 | 1 | 0 | **23.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **2.** | 0 | 1 | 2 | 3 | 4 | 5 | **24.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **3.** | 5 | 4 | 3 | 2 | 1 | 0 | **25.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **4.** | 0 | 1 | 2 | 3 | 4 | 5 | **26.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **5.** | 5 | 4 | 3 | 2 | 1 | 0 | **27.** | 0 | 1 | 2 | 3 | 4 | 5 |
| | | | **Total 1-5**_____ | | | | | | | **Total 23-27**_____ | | | |
| **6.** | 0 | 1 | 2 | 3 | 4 | 5 | **28.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **7.** | 0 | 1 | 2 | 3 | 4 | 5 | **29.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **8.** | 5 | 4 | 3 | 2 | 1 | 0 | **30.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **9.** | 0 | 1 | 2 | 3 | 4 | 5 | **31.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **10.** | 5 | 4 | 3 | 2 | 1 | 0 | **32.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 6-10**_____ | | | | | | | **Total 28-32**_____ | | | |
| **11.** | 0 | 1 | 2 | 3 | 4 | 5 | **33.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **12.** | 0 | 1 | 2 | 3 | 4 | 5 | **34.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **13.** | 0 | 1 | 2 | 3 | 4 | 5 | **35.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **14.** | 5 | 4 | 3 | 2 | 1 | 0 | **36.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **15.** | 5 | 4 | 3 | 2 | 1 | 0 | **37.** | 0 | 1 | 2 | 3 | 4 | 5 |
| | | | **Total 11-15**_____ | | | | | | | **Total 33-37**_____ | | | |
| **16.** | 0 | 1 | 2 | 3 | 4 | 5 | **38.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **17.** | 5 | 4 | 3 | 2 | 1 | 0 | **39.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **18.** | 5 | 4 | 3 | 2 | 1 | 0 | **40.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **19.** | 0 | 1 | 2 | 3 | 4 | 5 | **41.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **20.** | 5 | 4 | 3 | 2 | 1 | 0 | **42.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 16-20**_____ | | | | | | | **Total 38-42**_____ | | | |
| **21.** | 0 | 1 | 2 | 3 | 4 | 5 | **43.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **22.** | 5 | 4 | 3 | 2 | 1 | 0 | **44.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 21-22**_____ | | | | | | | **Total 43-44**_____ | | | |

**Total 1-22**_____ **+ Total 23-44**_____ **= Grand Total**_____

## Factor Scoring Sheet (PALS)

| Factor 1 | Factor 2 | Factor 3 | Factor 4 |
|---|---|---|---|
| 2. _____ | 3. _____ | 14._____ | 5. _____ |
| 4. _____ | 9. _____ | 31._____ | 8. _____ |
| 11._____ | 17._____ | 34._____ | 23._____ |
| 12._____ | 24._____ | 39._____ | 25._____ |
| 13._____ | 32._____ | 43._____ | |
| 16._____ | 35._____ | 44._____ | **Total** _____ |
| 19._____ | 37._____ | | |
| 21._____ | 41._____ | **Total** _____ | |
| 29._____ | 42._____ | | |
| 30._____ | | | |
| 38._____ | **Total** _____ | | |
| 40._____ | | | |
| **Total** _____ | | | |

| Factor 5 | Factor 6 | Factor 7 |
|---|---|---|
| 18._____ | 1. _____ | 6. _____ |
| 20._____ | 10._____ | 7. _____ |
| 22._____ | 15._____ | 26._____ |
| 28._____ | 36._____ | 27._____ |
| | | 33._____ |
| **Total** _____ | **Total** _____ | **Total** _____ |

| Factor | Factor Name | Average Score | PALS Score |
|---|---|---|---|
| 1 | Learner-Centered Activities | 38 | _____ |
| 2 | Personalizing Instruction | 31 | _____ |
| 3 | Relating to Experience | 21 | _____ |
| 4 | Assessing Student Needs | 14 | _____ |
| 5 | Climate Building | 16 | _____ |
| 6 | Participation in the Learning Process | 13 | _____ |
| 7 | Flexibility for Personal Development | 13 | _____ |
| | Total | 146 | _____ |

# Appendix B

## STUDENT PREFERENCES OF PRINCIPLES OF THE ADULT LEARNING SCALE (SPPALS) AND FORMS

Directions: The following survey contains several things that a teacher of adults might do in a classroom. You may personally find some of them desirable and find others undesirable. For each item please respond to the way you prefer the action described in the item. Please relate your answers to what you prefer in this type of classroom. Your choices are Always, Almost Always, Often, Seldom, Almost Never, and Never. On your answer sheet, circle 0 if you always prefer the event; circle number 1 if you almost always prefer the event; circle number 2 if you often prefer the event; circle number 3 if you seldom prefer the event; circle number 4 if you almost never prefer the event; and circle number 5 if you never prefer the event. If the item does not apply to you, circle number 5 for never.

| Always | Almost Always | Often | Seldom | Almost Never | Never |
|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 |

1. I prefer instructors who allow students to participate in developing the criteria for evaluating their performance in class.

2. I prefer instructors who use disciplinary action when it is needed.

3. I prefer instructors who allow older students more time to complete assignments when they need it.

4. I prefer instructors who encourage students to adopt middle class values.

5. I prefer instructors who help students diagnose the gaps between their goals and their present level of performance.

6. I prefer instructors who provide knowledge rather than serve as a resource person.

7. I prefer instructors who stick to the instructional objectives that he/she writes at the beginning of a program.

8. I prefer instructors who participate in the informal counseling of students.

9. I prefer instructors who use lecturing as the best method for presenting subject material to adult students.

10. I prefer instructors who arrange the classrooms so that it is easy for students to interact.

11. I prefer instructors who determine the educational objectives for each student.

12. I prefer instructors who plan units which differ as widely as possible from the student's socio-economic background.

13. I prefer instructors who get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions.

14. I prefer instructors who plan learning episodes to take into account a student's prior experiences.

15. I prefer instructors who allow students to participate in making decisions about the topics that will be covered in class.

16. I prefer instructors who use one basic teaching method because most adults have a similar style of learning.

17. I prefer instructors who use different techniques depending on the students being taught.

18. I prefer instructors who encourage dialogue among the students.

19. I prefer instructors who use written tests to assess the degree of academic growth rather than to indicate new directions for learning.

20. I prefer instructors who utilize the many competencies that most adults already possess to achieve educational objectives.

21. I prefer instructors who use what history has proven that adults need to learn, as the chief criteria for planning learning episodes.

22. I prefer instructors who accept errors as a natural part of the learning process.

23. I prefer instructors who use individual conferences to help students identify their educational needs.

24. I prefer instructors who let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept.

25. I prefer instructors who help students develop short-range as well as long-range objectives.

26. I prefer instructors who maintain a well-disciplined classroom to reduce interferences to learning.

27. I prefer instructors who avoid discussion on controversial subjects that involve value judgments.

28. I prefer instructors who allow students to take periodic breaks during class.

29. I prefer instructors who use methods that foster quiet, productive desk-work.

30. I prefer instructors who use tests as his/her chief method of evaluating students.

31. I prefer instructors who plan activities that will encourage each student's growth from dependence on others to greater independence.

32. I prefer instructors who gear his/her instructional objectives to match the individual abilities and needs of the students.

33. I prefer instructors who avoid issues that relate to the student's concept of himself/herself.

I prefer instructors who encourage students to ask questions about the nature of their society.

I prefer instructors who allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives.

I prefer instructors who have students identify their own problems that need to be solved.

I prefer instructors who give all students in the class the same assignment on a given topic.

I prefer instructors who use materials that were originally designed for students in elementary and secondary schools.

I prefer instructors who organize adult learning episodes according to the problems that the students will encounter in everyday life.

I prefer instructors who measure a student's long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests.

I prefer instructors who encourage competition among the students.

I prefer instructors who use different materials with different students.

I prefer instructors who help students relate new learning to their prior experiences.

I prefer instructors who teach units about problems of everyday living.

## Student Preferences of the Principles of Adult Learning Scale (SPPALS) Answer Sheet

| | Always | Almost Always | Often | Seldom | Almost Never | Never | | Always | Almost Always | Often | Seldom | Almost Never | Never |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.** | 0 | 1 | 2 | 3 | 4 | 5 | **23.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **2.** | 0 | 1 | 2 | 3 | 4 | 5 | **24.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **3.** | 0 | 1 | 2 | 3 | 4 | 5 | **25.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **4.** | 0 | 1 | 2 | 3 | 4 | 5 | **26.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **5.** | 0 | 1 | 2 | 3 | 4 | 5 | **27.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **6.** | 0 | 1 | 2 | 3 | 4 | 5 | **28.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **7.** | 0 | 1 | 2 | 3 | 4 | 5 | **29.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **8.** | 0 | 1 | 2 | 3 | 4 | 5 | **30.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **9.** | 0 | 1 | 2 | 3 | 4 | 5 | **31.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **10.** | 0 | 1 | 2 | 3 | 4 | 5 | **32.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **11.** | 0 | 1 | 2 | 3 | 4 | 5 | **33.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **12.** | 0 | 1 | 2 | 3 | 4 | 5 | **34.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **13.** | 0 | 1 | 2 | 3 | 4 | 5 | **35.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **14.** | 0 | 1 | 2 | 3 | 4 | 5 | **36.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **15.** | 0 | 1 | 2 | 3 | 4 | 5 | **37.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **16.** | 0 | 1 | 2 | 3 | 4 | 5 | **38.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **17.** | 0 | 1 | 2 | 3 | 4 | 5 | **39.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **18.** | 0 | 1 | 2 | 3 | 4 | 5 | **40.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **19.** | 0 | 1 | 2 | 3 | 4 | 5 | **41.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **20.** | 0 | 1 | 2 | 3 | 4 | 5 | **42.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **21.** | 0 | 1 | 2 | 3 | 4 | 5 | **43.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **22.** | 0 | 1 | 2 | 3 | 4 | 5 | **44.** | 0 | 1 | 2 | 3 | 4 | 5 |

## Student Preferences of the Principles of Adult Learning Scale (SPPALS) Scoring Sheet

| | Always | Almost Always | Often | Seldom | Almost Never | Never | | Always | Almost Always | Often | Seldom | Almost Never | Neve |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1.** | 5 | 4 | 3 | 2 | 1 | 0 | **23.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **2.** | 0 | 1 | 2 | 3 | 4 | 5 | **24.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **3.** | 5 | 4 | 3 | 2 | 1 | 0 | **25.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **4.** | 0 | 1 | 2 | 3 | 4 | 5 | **26.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **5.** | 5 | 4 | 3 | 2 | 1 | 0 | **27.** | 0 | 1 | 2 | 3 | 4 | 5 |
| | | | **Total 1-5**_____ | | | | | | | **Total 23-27**_____ | | | |
| **6.** | 0 | 1 | 2 | 3 | 4 | 5 | **28.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **7.** | 0 | 1 | 2 | 3 | 4 | 5 | **29.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **8.** | 5 | 4 | 3 | 2 | 1 | 0 | **30.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **9.** | 0 | 1 | 2 | 3 | 4 | 5 | **31.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **10.** | 5 | 4 | 3 | 2 | 1 | 0 | **32.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 6-10**_____ | | | | | | | **Total 28-32**_____ | | | |
| **11.** | 0 | 1 | 2 | 3 | 4 | 5 | **33.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **12.** | 0 | 1 | 2 | 3 | 4 | 5 | **34.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **13.** | 0 | 1 | 2 | 3 | 4 | 5 | **35.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **14.** | 5 | 4 | 3 | 2 | 1 | 0 | **36.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **15.** | 5 | 4 | 3 | 2 | 1 | 0 | **37.** | 0 | 1 | 2 | 3 | 4 | 5 |
| | | | **Total 11-15**_____ | | | | | | | **Total 33-37**_____ | | | |
| **16.** | 0 | 1 | 2 | 3 | 4 | 5 | **38.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **17.** | 5 | 4 | 3 | 2 | 1 | 0 | **39.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **18.** | 5 | 4 | 3 | 2 | 1 | 0 | **40.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **19.** | 0 | 1 | 2 | 3 | 4 | 5 | **41.** | 0 | 1 | 2 | 3 | 4 | 5 |
| **20.** | 5 | 4 | 3 | 2 | 1 | 0 | **42.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 16-20**_____ | | | | | | | **Total 38-42**_____ | | | |
| **21.** | 0 | 1 | 2 | 3 | 4 | 5 | **43.** | 5 | 4 | 3 | 2 | 1 | 0 |
| **22.** | 5 | 4 | 3 | 2 | 1 | 0 | **44.** | 5 | 4 | 3 | 2 | 1 | 0 |
| | | | **Total 21-22**_____ | | | | | | | **Total 43-44**_____ | | | |

**Total 1-22**_____ **+ Total 23-44**_____ **= Grand Total**_____

## Factor Scoring Sheet (SPPALS)

**Factor 1**

2. _____
4. _____
11. _____
12. _____
13. _____
16. _____
19. _____
21. _____
29. _____
30. _____
38. _____
40. _____

**Total** _____

**Factor 2**

3. _____
9. _____
17. _____
24. _____
32. _____
35. _____
37. _____
41. _____
42. _____

**Total** _____

**Factor 3**

14. _____
31. _____
34. _____
39. _____
43. _____
44. _____

**Total** _____

**Factor 4**

5. _____
8. _____
23. _____
25. _____

**Total** _____

**Factor 5**

18. _____
20. _____
22. _____
28. _____

**Total** _____

**Factor 6**

1. _____
10. _____
15. _____
36. _____

**Total** _____

**Factor 7**

6. _____
7. _____
26. _____
27. _____
33. _____

**Total** _____

| Factor | Factor Name | Average Score | PALS Score |
|---|---|---|---|
| 1 | Learner-Centered Activities | 38 | _____ |
| 2 | Personalizing Instruction | 31 | _____ |
| 3 | Relating to Experience | 21 | _____ |
| 4 | Assessing Student Needs | 14 | _____ |
| 5 | Climate Building | 16 | _____ |
| 6 | Participation in the Learning Process | 13 | _____ |
| 7 | Flexibility for Personal Development | 13 | _____ |
| | Total | 146 | _____ |

# Appendix C

## INSTRUMENT ITEMS CATEGORIZED FOR FACTORS

High total or overall scores indicate support for the collaborative teaching-learning mode and high scores on each factor indicate support for the concept implied for each element of the collaborative mode. The following items of the PALS instrument are categorized by factors. Words added for the SPPALS instrument are noted in ( ) parenthesis and words that were deleted for the SPPALS instrument are noted in [ ] brackets. Those items that are antithetical to the collaborative teaching-learning mode are noted as (negative) after the item.

The following items are included in Factor 1, Learner-centered Activities, and are all antithetical to the collaborative teaching-learning mode.

2. I (prefer instructors who) use disciplinary action when it is needed (Negative)

4. I (prefer instructors who) encourage students to adopt middle class values (Negative)

11. I (prefer instructors who) determine the educational objectives for each [of my] student[s] (Negative)

12. I (prefer instructors who) plan units which differ as widely as possible from [my] (the) student's socio-economic background[s] (Negative)

13. I (prefer instructors who) get a student to motivate himself/herself by confronting him/her in the presence of classmates during group discussions (Negative)

16. I (prefer instructors who) use one basic teaching method because most adults have a similar style of learning (Negative)

19. I (prefer instructors who) use written tests to assess the degree of academic growth rather than to indicate new directions for learning (Negative)

21. I (prefer instructors who) use what history has proven that adults need to learn as [my] (the) chief criteria for planning learning episodes (Negative)

29. I (prefer instructors who) use methods that foster quiet, productive desk-work (Negative)

30. I (prefer instructors who) use tests as [my] (his/her) chief method of evaluating students (Negative)

38. I (prefer instructors who) use materials that were originally designed for students in elementary and secondary schools (Negative)

40. I (prefer instructors who) measure a student's long-term educational growth by comparing his/her total achievement in class to his/her expected performance as measured by national norms from standardized tests (Negative)

The following items are included in Factor 2, Personalizing Instruction.

3. I (prefer instructors who) allow older students more time to complete assignments when they need it

9. I (prefer instructors who) use lecturing as the best method for presenting [my] subject material to adult students (Negative)

17. I (prefer instructors who) use different techniques depending on the students being taught

24. I (prefer instructors who) let each student work at his/her own rate regardless of the amount of time it takes him/her to learn a new concept

32. I (prefer instructors who) gear [my] (his/her) instructional objectives to match the individual abilities and needs of the students

35. I (prefer instructors who) allow a student's motives for participating in continuing education to be a major determinant in the planning of learning objectives

37. I (prefer instructors who) give all students in the class the same assignment on a given topic (Negative)

41. I (prefer instructors who) encourage competition among [my] (the) students (Negative)

42. I (prefer instructors who) use different materials with different students

The following items are included in Factor 3, Relating to Experience.

14. I (prefer instructors who) plan learning episodes to take into account [my] (a) student's prior experiences

31. I (prefer instructors who) plan activities that will encourage each student's growth from dependence on others to greater independence

34. I (prefer instructors who) encourage [my] students to ask questions about the nature of their society

39. I (prefer instructors who) organize adult learning episodes according to the problems that [my] (the) students will encounter in everyday life

43. I (prefer instructors who) help students relate new learning to their prior experiences

44. I (prefer instructors who) teach units about problems of everyday living

The following items are included in Factor 4, Assessing Student Needs.

5. I (prefer instructors who) help students diagnose the gaps between their goals and their present level of performance

8. I (prefer instructors who) participate in the informal counseling of students

23. I (prefer instructors who) use individual conferences to help students identify their educational needs

25. I (prefer instructors who) help [my] students develop short-range as well as long-range objectives

The following items are included in Factor 5, Climate Building.

18. I (prefer instructors who) encourage dialogue among [my] (the) students

20. I (prefer instructors who) utilize the many competencies that most adults already possess to achieve educational objectives

22. I (prefer instructors who) accept errors as a natural part of the learning process

28. I (prefer instructors who) allow [my] students to take periodic breaks during class

The following items are included in Factor 6, Participation in the Learning Process.

1. I (prefer instructors who) allow students to participate in developing the criteria for evaluating their performance in class

10. I (prefer instructors who) arrange the classrooms so that it is easy for students to interact

15. I (prefer instructors who) allow students to participate in making decisions about the topics that will be covered in class

36. I (prefer instructors who) have [my] students identify their own problems that need to be solved

The following items are included in Factor 7, Flexibility for Personal Development, and are antithetical to the collaborative teaching-learning mode.

6. I (prefer instructors who) provide knowledge rather than serve as a resource person (Negative)

7. I (prefer instructors who) stick to the instructional objectives that [I write] (he/she writes) at the beginning of a program (Negative)

26. I (prefer instructors who) maintain a well-disciplined classroom to reduce interferences to learning (Negative)

27. I (prefer instructors who) avoid discussion on controversial subjects that involve value judgments (Negative)

33. I (prefer instructors who) avoid issues that relate to the student's concept of himself/herself (Negative)

Appendix D

INSTRUCTOR INFORMATION FORM

**Instructor Information Form**

Please check one response for each item:

1. I am a male _____

   female _____

2. My age range is 25 - 39 years _____

   40 or over _____

3. This course is classified as quantitative _____

   qualitative _____

4. My full time career is teaching: yes _____

   no _____

5. I have taught:

   1 - 2 adult college credit courses _____

   3 or more adult college credit courses _____

Appendix E

STUDENT INFORMATION FORM

**Student Information Form**

Please check one response for each item:

1. I am a male _____

   female _____

2. My age range is 18-24 years _____

   25 years or older _____

3. This course is classified as quantitative _____

   qualitative _____

4. My major is: Business _____

   Social Science _____

   Education _____

   Other _____

5. I have attended Buena Vista College Center for:

   0-11 months _____

   1 year or longer _____

Appendix F

MEMO TO INSTRUCTORS

DATE:

TO: Term IV Faculty

FROM: Center Director

RE: Class Survey Thursday

Next Thursday, _____, Nancy Wilson, a doctoral student, would like to visit your classroom to administer a survey to the students and instructor on the instructional practices of teachers of adults and instructional preferences of adult learners.

Please let me know your preference:

I would like to participate in the study _____

I do not want to participate in the study _____

Please visit my classroom the early half of the 5:30 class

_____

Please visit my classroom the late half of the 5:30 class

_____

Name _____

# Appendix G

## CORRELATION TABLE

Pearson's Product Moment Correlation was used for the comparative values. The mean of the instructor and the class mean of his/her classroom was used to determine the congruence between the instructor and the students. No relationship was found between the instructional orientation of teachers of adults and the instructional preferences of the adult learners with r = .130. Table G-1 shows the correlation between the teachers of adults (instructors) and the adult learners (nontraditional students).

Table G-1

Correlation between Instructors and Nontraditional Students

| | Number of Cases | CoVariance | Correlation | $r^2$ |
|---|---|---|---|---|
| Total | 341 | 35.79 | .130 | .01690 |
| 1. Learner-centered Activities | 341 | 0.14 | .004 | <.00001 |
| 2. Personalizing Instruction | 341 | 3.41 | .120 | .01000 |
| 3. Relating to Experience | 341 | 1.75 | .110 | .01000 |
| 4. Assessing Student Needs | 341 | 1.36 | .120 | .01000 |
| 5. Climate Building | 341 | 1.02 | .003 | <.01000 |
| 6. Participation in Learning Process | 341 | 1.10 | .110 | .01000 |
| 7. Flexibility for Personal Development | 341 | 1.17 | .020 | .00030 |